
4.12 TRANSPORTATION AND TRAFFIC

4.12.1 INTRODUCTION

This section describes the existing transportation setting and analyzes the potential impacts of the proposed Gallery at Central Park Project on transportation and traffic. Information to prepare this section was obtained from the traffic report prepared for the project by Fehr & Peers Transportation Consultants. This report is included in its entirety in **Appendix 4.12** of this EIR. Note that this report includes a traffic impact assessment of the proposed project assuming a vacant project site for Parcels 1 and 2 and 30,000 square feet of medical/administrative offices for Parcel 3. The traffic report also includes an analysis of the re-occupancy of the site as a hospital facility of the same magnitude and intensity as the former Kaiser hospital located at the site. This latter information is not included in this section, but is presented in **Section 5.0, Alternatives**.

Several traffic-related comments were received in response to the Notice of Preparation circulated for this Environmental Impact Report (EIR). Commenters stated that the provision of parking at the rate of two cars per unit may be insufficient for the proposed project. Commenters also asked that distribution and use of parking spaces should be considered as part of the parking analysis. One commenter questioned whether a pedestrian bridge could be built between the project site and Central Park to enhance the safety of pedestrians crossing the street. Another commenter expressed concern with increased traffic in relation to the capacity load of the street system surrounding the site, and the impact the increased traffic would have on pedestrians and bicyclists using those local roadways. These scoping comments are addressed in the impact analysis presented below.

Some commenters asked whether traffic calming measures would be implemented in the neighborhood surrounding the project site. Note that the Development Agreement requires the project applicant to pay into a traffic calming study prior to the issuance of a Certificate of Occupancy. The study will assess the need for traffic calming measures in the surrounding neighborhood after project construction, if the project is approved.

4.12.2 ENVIRONMENTAL SETTING

This subsection describes the existing condition of the transportation system, including roadway facilities, pedestrian and bicycle facilities, transit service, traffic volumes, and intersection operations.

4.12.2.1 Existing Roadway Network

The location of the project site and the surrounding roadway network are shown in **Figure 4.12-1, Project Location and Study Intersections**. Lawrence Expressway, San Tomas Expressway, Kiely Boulevard, and

Homestead Road provide regional access to the project site and its vicinity. As described below, local access to the project site is provided by Kaiser Drive and Pepper Tree Lane.

Lawrence Expressway is an eight-lane, north-south expressway located west of the site, extending north from Saratoga Avenue in San Jose to State Route 237 in the City of Sunnyvale. Lawrence Expressway includes high occupancy vehicle (HOV) lanes in both directions. HOV lanes, also known as diamond or carpool lanes are restricted for use by vehicles occupied by two or more persons or motorcycles between 6:00 AM and 9:00 AM and between 3:00 PM and 7:00 PM. HOVs include carpools, vanpools, and buses.

San Tomas Expressway is a six-lane, north-south expressway located east of the site. San Tomas Expressway extends north from Highway 17 in Campbell to US 101. San Tomas Expressway includes HOV lanes in both directions.

Kiely Boulevard is a four-lane, north-south arterial roadway that extends from Saratoga Avenue to El Camino Real. Kiely Boulevard becomes Bowers Avenue north of El Camino Real. Kiely Boulevard forms the eastern boundary of the project site.

Homestead Road is a four-lane, east-west arterial that extends from Foothill Expressway in Los Altos to Lincoln Street in Santa Clara. Homestead Road is located south of the project site and provides access to residential and commercial uses in the area.

Kaiser Drive is a two-lane, east-west street extending between Pepper Tree Lane and Kiely Boulevard.

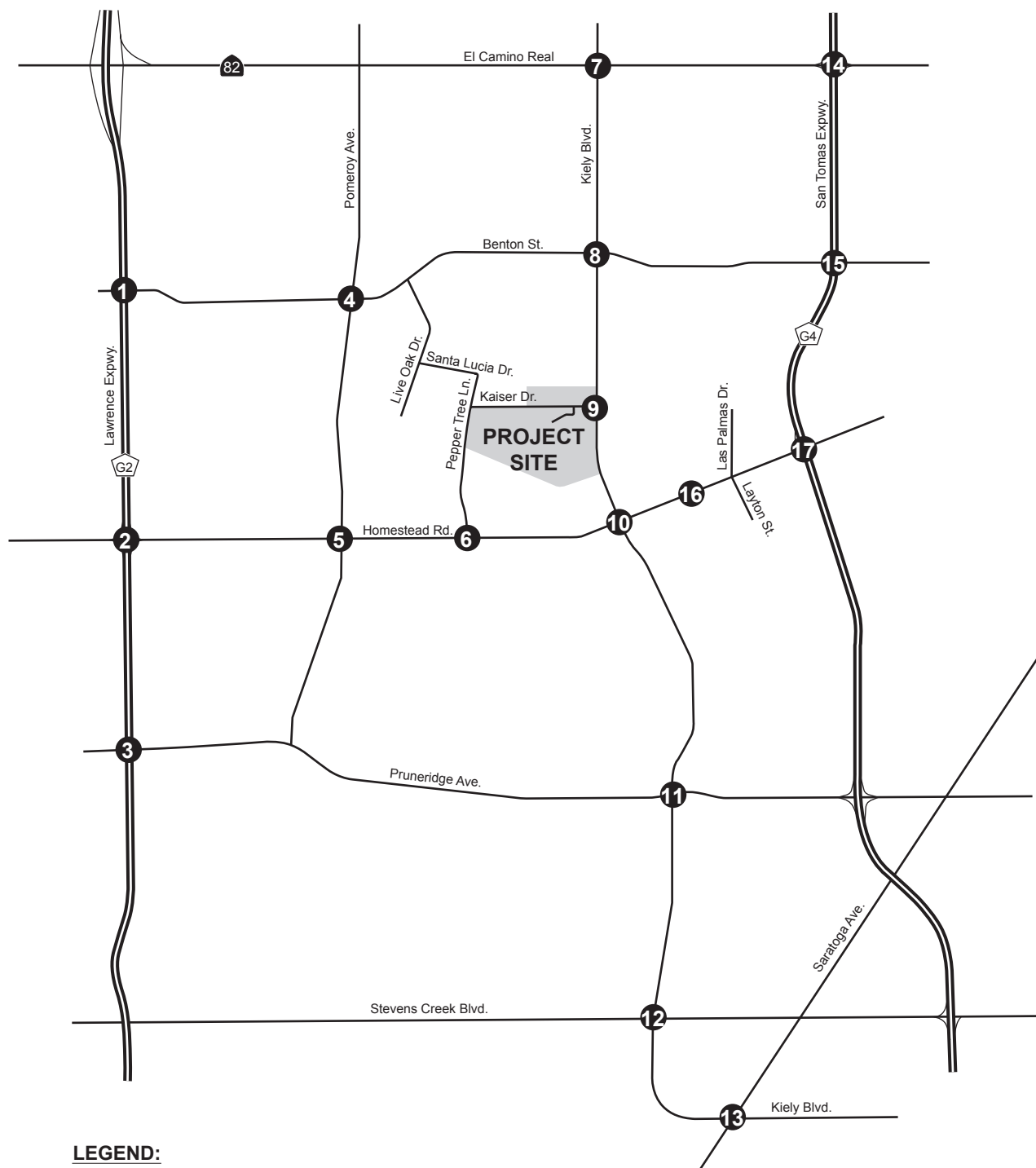
Pepper Tree Lane is a two-lane, north-south residential street. It forms the western boundary of the project site.

Live Oak Drive is a two-lane, north-south residential street located northwest of the site. It connects Pepper Tree Lane to Benton Street via Santa Lucia Drive.

4.12.2.2 Pedestrian and Bicycle Facilities

Pedestrian facilities include sidewalks, marked crosswalks, and pedestrian signals at signalized intersections. Sidewalks are located on both sides of Kaiser Drive and Kiely Boulevard near the project site. All of the signalized intersections in the area are equipped with marked crosswalks and pedestrian signals.

Bicycle facilities comprise bike paths (Class I), bike lanes (Class II), and bike routes (Class III). Bike paths are paved pathways that are separate from the roadways and are designated for use by bicycles. Bike lanes are lanes on roadways designated for use by bicycles with special lane markings, pavement legends, and signage. Within the study area, Class II bicycle lanes are located on Pomeroy Avenue between Pruneridge Avenue and Calabazas Boulevard. Bicycles are permitted on Lawrence Expressway and San Tomas Expressway.



LEGEND:

1 = Study Intersections



NOT TO SCALE

SOURCE: Fehr & Peers - April 2008

FIGURE 4.12-1

Project Location and Study Intersections

4.12.2.3 Existing Transit Service

The Santa Clara Valley Transit Authority (VTA) operates bus service in the Santa Clara County including the City of Santa Clara. **Figure 4.12-2, Existing Bus Routes** shows the existing bus routes in the project area.

VTA Routes 81, 328, and 330 provide service near the project site along Kiely Boulevard, Lawrence Expressway, and San Tomas Expressway, respectively. **Table 4.12-1, Existing Transit Service** summarizes the destinations, hours and days of operation, and service frequencies for the bus routes that stop at the site. The closest bus stop to the project site is located on Kiely Boulevard with duckouts just south of Kaiser Drive. This bus stop is on Route 81. Riders on route 81 can transfer to Route 60 to access the Santa Clara Caltrain station.

Table 4.12-1
Existing Transit Service

Route	From	To	Operating Hours	Weekdays		Weekends	
				Peak Frequency ⁴	Midday Frequency ⁴	Operating Hours	Midday Frequency ⁴
81 ¹	San Jose State University	Cupertino Square	5:41 AM–9:30 PM	30	30	7:26 AM–8:30 PM	60
328 ²	Almaden Expressway/Camden	Lockheed Martin/Moffett Industrial Park	6:42 AM–5:11 PM	NA	NA	NA	NA
330 ³	Almaden Expressway/Camden	Tasman	7:04 AM–8:31 AM 4:51 PM–6:36 PM	45-60	NA	NA	NA

Source: Fehr & Peers 2008

Notes:

¹ Operating hours and frequency at Kiely and Benton timed bus stop.

² Operating hours and frequency at Lawrence and El Camino timed bus stop.

³ Operating hours and frequency at San Tomas and El Camino times' bus stop.

⁴ Peak and midday frequency expressed in minutes.

NA = Not Applicable

4.12.2.4 Traffic Operations Analysis

Intersection operations during typical weekday AM and PM peak hours were evaluated under existing conditions at the following 17 intersections.

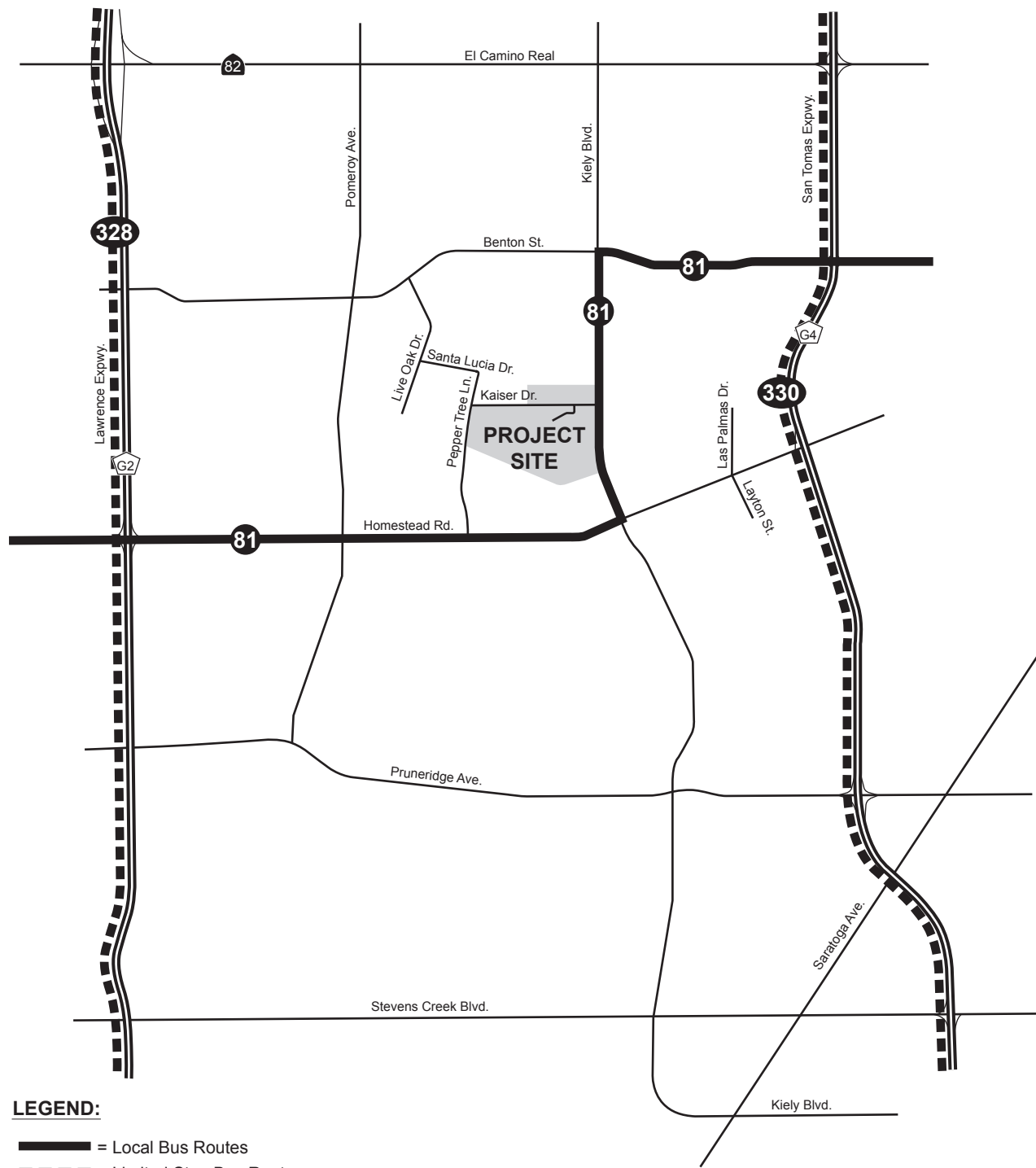
- Lawrence Expressway and Benton Street

- Lawrence Expressway and Homestead Road
- Lawrence Expressway and Pruneridge Avenue
- Pomeroy Avenue and Benton Street
- Pomeroy Avenue and Homestead Road
- Pepper Tree Lane and Homestead Road
- Bowers Avenue and El Camino Real
- Kiely Boulevard and Benton Street
- Kiely Boulevard and Kaiser Drive
- Kiely Boulevard and Homestead Road
- Kiely Boulevard and Pruneridge Avenue
- Kiely Boulevard and Stevens Creek Boulevard
- Kiely Boulevard and Saratoga Avenue
- San Tomas Expressway and El Camino Real
- San Tomas Expressway and Benton Street
- Library Entrance and Homestead Road
- San Tomas Expressway and Homestead Road

The intersection of Kaiser Drive and Pepper Tree Lane was not evaluated since the neighborhood traffic analysis (based on daily roadway segment volumes) provides a better indication of the project's impacts on Pepper Tree Lane.

Intersection Operation Analysis Method

Transportation engineers and planners commonly use a grading system called Level of Service (LOS) to measure and describe the operation of a local roadway network. The LOS grading system qualitatively characterizes traffic conditions associated with varying levels of traffic.



SOURCE: Fehr & Peers - April 2008

FIGURE 4.12-2

Existing Bus Routes

LOS varies from LOS A, indicating free flow traffic conditions with little or no delay, to LOS F, representing over-saturated conditions where traffic flows exceed design capacity, resulting in long queues and delays.

All of the study intersections are signalized. Intersection traffic conditions and resulting LOS were determined using the *Highway Capacity Manual (HCM)-Special Report 209*, with adjusted saturation flow rates to reflect conditions in Santa Clara County. This method uses intersection characteristics (such as traffic volumes, lane geometry, and signal phasing) to estimate the average control delay per vehicle. Control delay is defined as total delay attributed to signal operations and includes initial deceleration delay, queue move up time, stopped delay, and final acceleration delay. The LOS for a signalized intersection is based on the average control delay per vehicle for the signalized intersection measured in seconds. **Table 4.12-2, Signalized Intersection Level of Service Definitions**, summarizes the LOS criteria for signalized intersections.

The City of Santa Clara has established a minimum acceptable operating level of LOS D for intersections excluded from the Congestion Management Program (CMP). The minimum acceptable level for CMP-monitored intersections is LOS E.

Table 4.12-2
Signalized Intersection Level of Service Definitions

LOS	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 10.0
B+	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 12.0
B		12.1 to 18.0
B-		18.1 to 20.0
C+	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 23.0
C		23.1 to 32.0
C-		32.1 to 35.0
D+	Operations with longer delays due to combination of unfavorable progression, long cycle lengths, and high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 39.0
D		39.1 to 51.0
D-		51.1 to 55.0
E+	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	55.1 to 60.0
E		60.1 to 75.0
E-		75.1 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	> 80.0

Source: Fehr & Peers 2008

Existing Intersection Volumes and Lane Configurations

Peak traffic conditions generally occur on weekday mornings from 7:00 AM to 9:00 AM and during evenings from 4:00 PM to 6:00 PM. Intersection operations were evaluated for 1 hour during each of these periods with the highest measured traffic volumes. Existing peak-hour traffic volumes were obtained from traffic counts conducted in January and February 2008 at most of the intersections. At the time of these counts, the existing hospital was closed and services had relocated to the Lawrence Expressway campus on Homestead Avenue in the City of Santa Clara. Traffic volumes for two of the study intersections were counted in November 2007. **Figure 4.12-3, Existing Peak-Hour Traffic Volumes**, presents the existing AM and PM peak-hour turning movement volumes at the study intersections. Detailed traffic count data are provided in **Appendix 4.12** of this EIR. Existing intersection-lane configurations and traffic-control devices for the study intersections are shown on **Figure 4.12-4, Existing Lanes Configuration and Control**.

4.12.2.5 Existing Intersection Operations

Table 4.12-3, Existing Conditions – Study Intersection LOS Summary, summarizes the existing weekday peak hour intersection LOS. Detailed calculation work sheets are provided in **Appendix 4.12** of this EIR. As shown in the table, three of the study intersections currently operate at LOS E or F. The Lawrence Expressway/Homestead Road, San Tomas Expressway/El Camino Real, San Tomas Expressway/Homestead Road intersections currently operate at LOS E during the PM peak hour. The San Tomas Expressway/El Camino Real intersection also operates at LOS F during the AM peak hour. The remaining study intersections operate at LOS D or better during both peak hours.

Table 4.12-3
Existing Conditions – Study Intersection LOS Summary

Intersection	Peak Hour¹	Count Date⁵	Intersection Control	Avg Delay²	LOS³
1. Lawrence Expwy/Benton St	AM PM	02/2008	Signal	38.0 29.5	D+ C
2. Lawrence Expwy/Homestead Rd ⁴	AM PM	10/2007	Signal	47.6 98.8	D F
3. Lawrence Expwy/Pruneridge Ave	AM PM	10/2007	Signal	45.6 34.0	D C-
4. Pomeroy Ave/Benton St	AM PM	02/2008	Signal	11.1 11.3	B+ B+

Intersection	Peak Hour ¹	Count Date ⁵	Intersection Control	Avg Delay ²	LOS ³
5. Pomeroy Ave/ Homestead Rd	AM PM	02/2008	Signal	19.7 20.2	B- C+
6. Pepper Tree Lane/ Homestead Rd	AM PM	01/2008	Signal	10.4 7.7	B+ A
7. Bowers Ave/ El Camino Real ⁴	AM PM	02/2008	Signal	30.4 35.6	C D+
8. Kiely Blvd/ Benton St	AM PM	2/2008	Signal	31.6 29.6	C C
9. Kiely Blvd/ Kaiser Dr	AM PM	1/2008	Signal	10.8 10.9	B+ B+
10. Kiely Blvd/ Homestead Rd	AM PM	1/2008	Signal	31.4 32.5	C C-
11. Kiely Blvd/ Pruneridge Ave	AM PM	2/2008	Signal	30.0 29.6	C C
12. Kiely Blvd/ Stevens Creek ⁴	AM PM	2/2008	Signal	39.8 43.2	D D
13. Kiely Blvd/ Saratoga Ave ⁴	AM PM	2/2008	Signal	33.6 45.9	C- D
14. San Tomas Expwy/El Camino Real ⁴	AM PM	2/2008	Signal	89.6 80.4	F F
15. San Tomas Expwy/Benton St	AM PM	2/2008	Signal	56.6 40.4	E+ D
16. Library Entrance/ Homestead Rd	AM PM	2/2008	Signal	17.2 21.8	B C+
17. San Tomas Expwy/ Homestead Rd	AM PM	2/2008	Signal	54.4 62.9	D- E

Source: Fehr & Peers 2008

Notes:

¹ AM = morning peak-hour, PM = evening peak-hour

² Whole intersection weighted average control delay expressed in seconds per vehicle for signalized intersections using methodology described in the 2000 Highway Capacity Manual. LOS calculations conducted using the TRAFFIX level of service analysis software package.

³ LOS= Level of Service based on average delay calculations

⁴ Designated CMP intersection

⁵ Traffic counts conducted after hospital closed and services had relocated to the Lawrence Expressway campus.

Field Observations

Field observations of the signalized study intersections were conducted during the morning and evening peak hours in January and February 2008. The intersections were generally observed to operate at the calculated levels of service for each peak period.

During the AM peak period, the general travel pattern is northbound on San Tomas Expressway and Lawrence Expressway towards US 101. This pattern reverses during the PM peak period.

During the AM peak period, the northbound traffic on Saratoga Avenue at Kiely Boulevard typically queues back to the upstream intersection and requires multiple cycles to clear this approach. At the intersection of San Tomas Expressway/El Camino Real, all four lanes in the northbound direction on San

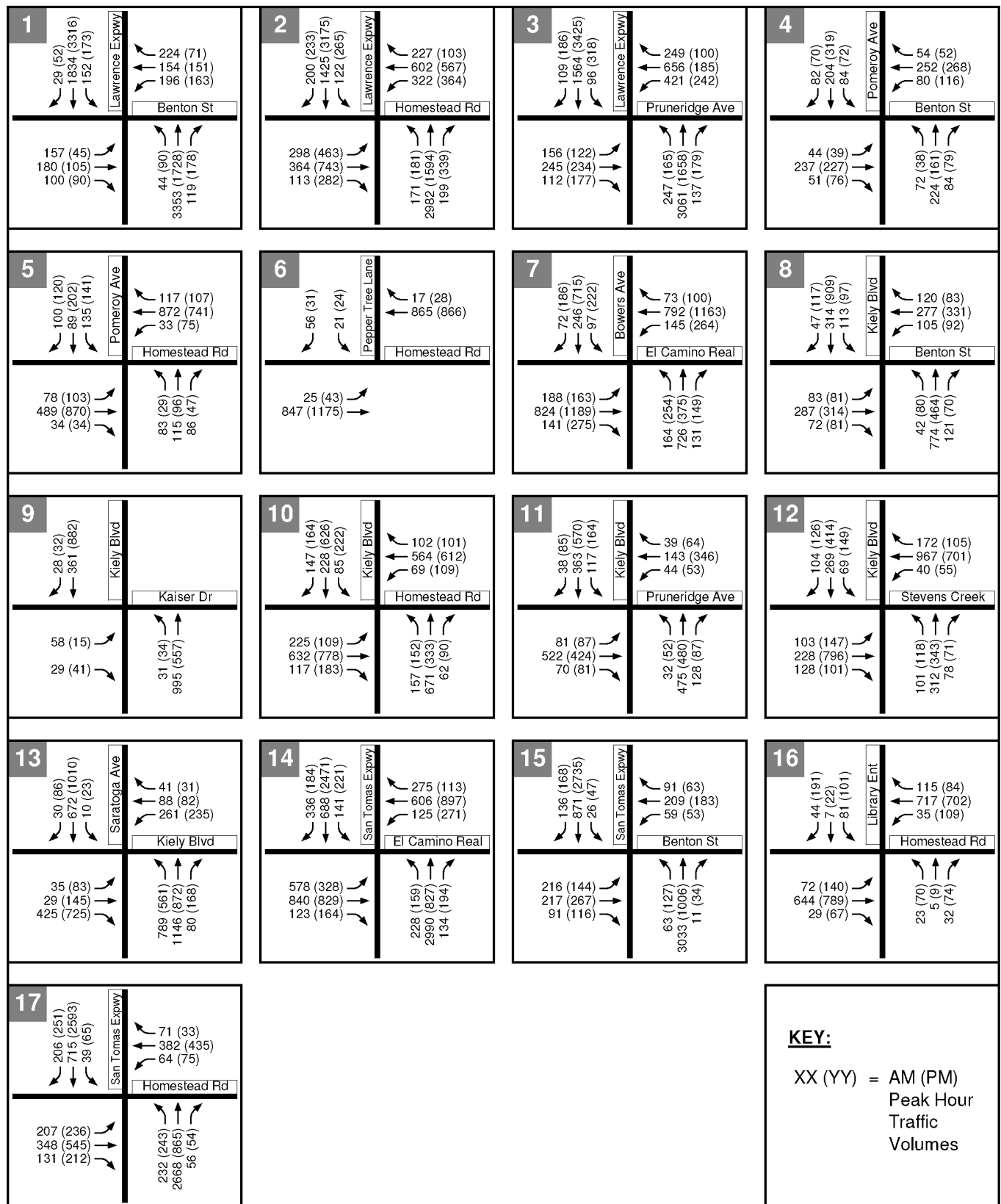
Tomas Expressway routinely queue back to Benton Street. The eastbound vehicles turning left from El Camino Real consistently queue out of the storage pocket and require multiple cycles to clear the intersection. At San Tomas Expressway/Benton Street, queues in the northbound direction are substantial with observed queues estimated to be over 1,000 feet long.

During the PM peak period, the eastbound right-turn traffic on Kiely Boulevard at Saratoga Avenue typically has long queues past the upstream intersection due to heavy right turns and heavy southbound traffic on Saratoga Avenue. Traffic at the intersection of San Tomas Expressway/Homestead Road is heavy in all directions; however, the queues clear within one or two cycle lengths. Traffic conditions along San Tomas Expressway reverse in the PM peak period resulting in heavy queues in the southbound direction that extend from Homestead Road through El Camino Real.

At the Lawrence Expressway/Benton Street intersection, the westbound left-turn was observed to queue back past Angelina Drive during both the AM and PM peak hours. However, vehicles typically clear in one cycle. During both AM and PM peak hours, the eastbound vehicles turning left from Benton Street queue out of the storage pocket past Las Palmas Drive and require multiple cycles to clear the intersection.

4.12.3 REGULATORY CONSIDERATIONS

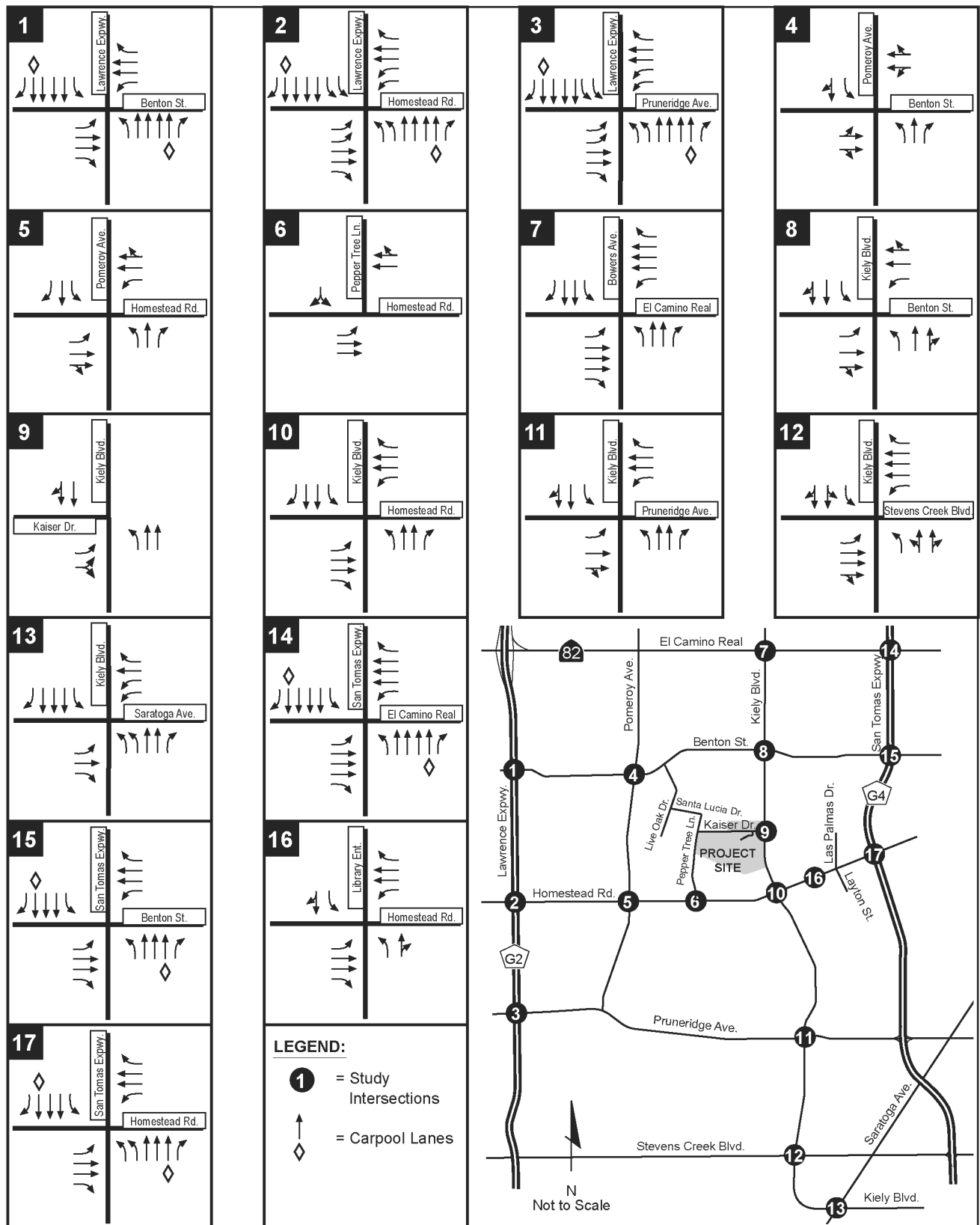
The Santa Clara VTA and City of Santa Clara General Plan provide policies applicable to the project and related to transportation.



SOURCE: Fehr & Peers - August 2008

FIGURE 4.12-3

Existing Peak-Hour Traffic Volumes



SOURCE: Fehr & Peers - August 2008

FIGURE 4.12-4

Existing Lanes Configuration and Control

4.12.3.1 Santa Clara County VTA

The VTA is responsible for ensuring local government conformance with the CMP for Santa Clara County, a program aimed at reducing regional traffic congestion. The CMP requires that each jurisdiction identify existing and future transportation facilities that will operate below an acceptable service level and provide mitigation where future growth degrades that service level below identified thresholds. The VTA has review responsibility for proposed development projects that are expected to generate 100 or more additional AM or PM peak-hour trips.

The VTA reviews the adequacy of California Environmental Quality Act (CEQA) analysis and measures to mitigate impacts. The VTA maintains a countywide transportation model and has approval authority for the use of any local or subarea transportation models. Capital improvement programs for transportation projects across Santa Clara County are generally tracked by the VTA, and allocations of major funding programs are performed under the leadership of this agency.

4.12.3.2 City of Santa Clara General Plan

The following transportation-related policies in the City of Santa Clara General Plan Transportation Element are applicable to the Gallery at Central Park project:

Transportation Element Goal: The goal of the transportation element is to strive to provide a safe and convenient integrated transportation system, which moves people and goods from place to place efficiently and in a cost-effective manner.

Roadways

Policy 1: Maximize the existing investment in roads. Make improvements to local thoroughfares within the existing right-of-way or adopted plan lines as warranted by demand and where cost effective.

Policy 2: Support efficient and effective use of revenue sources to adequately meet transportation needs.

Program (i): Minimize spillover traffic from overloaded regional highways onto local streets. (Ongoing, Public Works Department)

Roadway Program (ii): Concentrate through traffic on major streets. (Ongoing, Public Works Department)

Roadway Program (iii): Interconnect traffic signals to synchronize timing and monitor traffic conditions.
(Ongoing, Public Works Department)

Roadway Program (iv): Continue to require property owners to provide rights of way, streets, and sidewalks that meet City standards for width and construction. (Ongoing, Public Works Department)

Transportation Demand Management (TDM)

Policy 4: Minimize the number of automobiles used in commuting.

Policy 5: Promote increase vehicle occupancy during commute hours. Promote measures to decrease the percentage of local employees commuting alone in their automobiles.

Program (xii): Encourage new development to incorporate TDM measures through site design guidelines, including preferential carpool and vanpool parking, flextime, transit ticket sales, enhanced pedestrian access, bicycle storage and on-site eating and recreation facilities. (Ongoing, Planning Division)

Bus and Rail Systems

Policy 6: Support a transit system that provides enhanced commuter service.

Policy 7: Support a coordinated transit system that circles the South Bay and the Peninsula.

Policy 8: Support the County's effort to provide transit service to dependent populations such as the disabled, elderly, children, and those who cannot drive.

Program (xxii): Encourage higher densities and supportive uses around major transit stations.
(Ongoing, City Council)

Sidewalks, Bikeways and Trails

Policy 9: Encourage the use of bicycles and walking as alternatives to driving.

Policy 10: New overpasses and interchanges should be designed to accommodate bicycles and pedestrians.

Program (xxiii): Require the construction of sidewalks in developments, redevelopments and major expansions. (Ongoing, Public Works Department, Planning Division)

Program (xxiv): Encourage convenient pedestrian links between buildings and parcels occupied by the same company. (Ongoing, Planning Division)

4.12.4 IMPACTS AND MITIGATION MEASURES

4.12.4.1 Significance Criteria

According to Appendix G of the *State CEQA Guidelines*, a significant impact would occur if the project would:

- cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system;
- exceed, either individually or cumulatively, LOS standards established by the County congestion management agency for designated roads or highways;
- result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- result in inadequate emergency access;
- result in inadequate parking capacity; or
- conflict with adopted policies, plans or programs supporting alternative transportation.

The determination of significance of the impacts associated with implementation of the Gallery at Central Park project is based on applicable policies, regulations, goals, and guidelines defined by the VTA and by the City of Santa Clara. Each of these regulating bodies have established performance criterion for facilities under their jurisdiction. The City of Santa Clara has developed the criteria listed below and would consider the proposed project to have a significant impact at the study intersections if it would cause:

- intersection operations to degrade from an acceptable level (LOS D or better) under Background Conditions to an unacceptable level (LOS E or F) under Project Conditions;
- unacceptable intersection operations to be exacerbated by increasing the critical delay by more than 4 seconds and increasing the volume-to-capacity (V/C) ratio by 0.01 or more; or

- the V/C ratio to increase by 0.01 or more at an intersection with unacceptable operations (LOS E or F) when the change in critical delay is negative (i.e., decreases)(this can occur if the critical movements change).

According to the City of Santa Clara, the proposed project would result in a significant neighborhood traffic impact if implementation of the project:

- causes the average weekday daily traffic volume to exceed 1,500 vehicles per day (vpd) on a local residential street or 2,800 vpd on a residential collector street; or
- increases the average weekday daily traffic volume by 150 vpd on any local or residential collector street, regardless of its existing volume.

According to VTA, a significant impact at CMP intersections would occur when the addition of project traffic causes one of the following.

- Operations degrade from an acceptable level (LOS E or better) under Background Conditions to an unacceptable level (LOS F) under Project Conditions.
- Unacceptable operations are exacerbated by increasing the critical delay by more than 4 seconds and increasing the V/C ratio by 0.01 or more.
- The V/C ratio increases by 0.01 or more at an intersection with unacceptable operations (LOS E or F) when the change in critical delay is negative (i.e., decreases). This can occur if the critical movements change.

4.12.4.2 Issues Not Discussed Further

There are no airports within 3 miles of the project site (Mineta-San Jose International Airport is located approximately 3 miles east of the proposed project site). Therefore, the project would not change existing air traffic patterns. This issue is not addressed further in this analysis.

4.12.4.3 Methodology

The impacts of the proposed project to the surrounding transportation system are evaluated using the guidelines provided by the City of Santa Clara and the VTA. The operation of 17 study intersections are evaluated with level of service calculations during the weekday morning (AM) and evening (PM) peak period for the five scenarios listed below:

- **Scenario 1: Existing Conditions**
- **Scenario 2: Background Conditions**
- **Scenario 3: Project conditions**
- **Scenario 4: Cumulative No-Project Conditions**

- **Scenario 5: Cumulative Plus Project Conditions**

A description of the methods used to estimate the amount of traffic generated by the project is provided below. The project-specific impacts and the project's contribution to cumulative impacts are described below under **subsection Impacts and Mitigation Measures**.

Scenario 1: Existing Conditions

The existing conditions were characterized based on the existing traffic volumes obtained from counts that represent the worst 1 hour during the morning and evening commute peak traffic periods. Existing traffic volumes do not include any hospital traffic from the former Kaiser facility located at the project site, since the hospital was not operational at the time the NOP was published for the project. Please refer to **Section 4.0, Environmental Setting, Impacts, and Mitigation Measures**, for a detailed discussion of the environmental setting (baseline conditions) considered for the project. However, the traffic volumes associated with the existing 30,000 square feet of medical/administrative office uses on Parcel 3 is considered as part of existing conditions, since those medical buildings are currently in operation and contribute traffic in the project area. Existing levels of service are presented in **Table 4.12-3**.

Scenario 2: Background Conditions

Background conditions are the conditions prior to completion of the proposed project and serve as the basis for identifying project impacts. Traffic volumes for background conditions comprise existing traffic volumes plus traffic generated by approved developments in the area. Because these developments have already been approved and are therefore expected to be built, it is reasonable to assume that traffic associated with these developments will be added to the study area road network. Existing intersection lane configurations were used for the background condition analysis because no future roadway improvements would be implemented at any of the study intersections prior to completion of the proposed project (2011).

Background Traffic Estimates

Traffic volumes for background conditions have been estimated by adding estimates of traffic generated by approved, but not yet constructed and occupied developments in the study area to existing volumes. The list of approved projects, presented in **Table 4.0-1, Related Projects**, was developed with input from City of Santa Clara staff. Traffic estimates from the approved developments were obtained from traffic impact reports or estimated using Institute of Transportation Engineers (ITE) trip generation rates and by applying standard engineering practice. The trips associated with each approved development were assigned to the roadway network based on the following: (1) the relative locations of complementary land

uses and (2) existing and projected future travel patterns. **Figure 4.12-5, Background Peak-Hour Traffic Volumes**, illustrates the traffic volumes at the study intersections under background conditions.

Background Intersection Levels of Service

The level of service calculations for study intersections were conducted to evaluate the operating levels of service at the intersections under background conditions. Table 4.12-4, Background Intersection Levels of Service, shows operating levels of the study intersections.

Table 4.12-4
Background Intersection Levels of Service

Intersection	Peak Hour	Intersection Control	Avg Delay ²	LOS ³
1. Lawrence Expwy/Benton St	AM	Signal	39.1	D
	PM		30.7	C
2. Lawrence Expwy/Homestead Rd ⁴	AM	Signal	53.2	D-
	PM		131.3	F
3. Lawrence Expwy/Pruneridge Ave	AM	Signal	47.9	D
	PM		35.1	D+
4. Pomeroy Ave/Benton St	AM	Signal	11.2	B+
	PM		11.4	B+
5. Pomeroy Ave/Homestead Rd	AM	Signal	19.9	B-
	PM		20.6	C+
6. Pepper Tree Lane/Homestead Rd	AM	Signal	10.0	B+
	PM		7.4	A
7. Bowers Ave/El Camino Real ⁴	AM	Signal	31.3	C
	PM		38.2	D+
8. Kiely Blvd/Benton St	AM	Signal	31.8	C
	PM		29.3	C
9. Kiely Blvd/Kaiser Dr	AM	Signal	11.4	B+
	PM		11.4	B+
10. Kiely Blvd/Homestead Rd	AM	Signal	31.8	C
	PM		33.1	C-
11. Kiely Blvd/Pruneridge Ave	AM	Signal	29.9	C
	PM		29.8	C
12. Kiely Blvd/Stevens Creek ⁴	AM	Signal	40.0	D
	PM		42.9	D
13. Kiely Blvd/Saratoga Ave ⁴	AM	Signal	33.3	C-
	PM		48.0	D
14. San Tomas Expwy/El Camino Real ⁴	AM	Signal	95.8	F
	PM		93.5	F
15. San Tomas Expwy/Benton St	AM	Signal	67.2	E
	PM		47.5	D

Intersection	Peak Hour	Intersection Control	Avg Delay ²	LOS ³
16. Library Entrance/Homestead Rd	AM	Signal	16.8	B
	PM		21.4	C+
17. San Tomas Expwy/Homestead Rd ⁴	AM	Signal	60.5	E
	PM		75.7	E-

Source: Fehr and Peers 2008

Notes:

¹ AM = morning peak hour, PM = evening peak hour.

² Whole intersection weighted average control delay expressed in seconds per vehicle for signalized intersections using methodology described in the 2000 Highway Capacity Manual. LOS calculations conducted using the TRAFFIX level of service analysis software package.

³ LOS = Level of service based on average delay calculations

⁴ Designated CMP intersection

As shown in **Table 4.12-4**, the addition of background traffic will further exacerbate the LOS E or F operations at the following intersections:

- #2 Lawrence Expressway and Homestead Road (LOS F, PM peak hour);
- #14 San Tomas Expressway and El Camino Real (LOS F, AM and PM peak hours);
- #15 San Tomas Expressway and Benton Street (LOS E, AM peak hour); and
- #17 San Tomas Expressway and Homestead Road (LOS E, AM and PM peak hour).

Additionally, the Lawrence Expressway/Homestead Road intersection would worsen to LOS E during the AM peak hour, which is acceptable for a CMP designated intersection. The remaining study intersections would remain at acceptable levels of service.

Scenario 3: Project Conditions

Project Traffic Estimates

The amount of traffic added to the roadway system by a proposed project is estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. The first step estimates the amount of traffic added to the roadway network. The second step estimates the direction of travel to and from the project site. The trips are assigned to specific street segments and intersection turning movements during the third step. The results of the process for the proposed project are described below.

Project Trip Generation

The amount of traffic added to the surrounding roadway system by the proposed project was estimated by applying appropriate AM and PM peak hour trip generation rates published in *Trip Generation* (7th Edition) by the ITE. The peak-hour trip generation rates and trip estimates are shown in **Table 4.12-5, Project Trip Generation Rates and Estimates**. Three medical office/administrative buildings totaling approximately 30,000 square feet currently occupy Parcel 3. Driveway counts were conducted at the site to determine the number of existing trips generated by these buildings and are summarized in **Table 4.12-5**. The existing trips related to buildings on Parcel 3 were subtracted from the trips generated by the proposed project to determine the number of net new trips that would be generated by the project. As shown in **Table 4.12-5**, the proposed residential project is estimated to generate 4,302 net new daily trips, 343 net new AM peak hour trips, and 396 net new PM peak hour trips.

Table 4.12-5
Project Trip Generation Rates¹ and Estimates

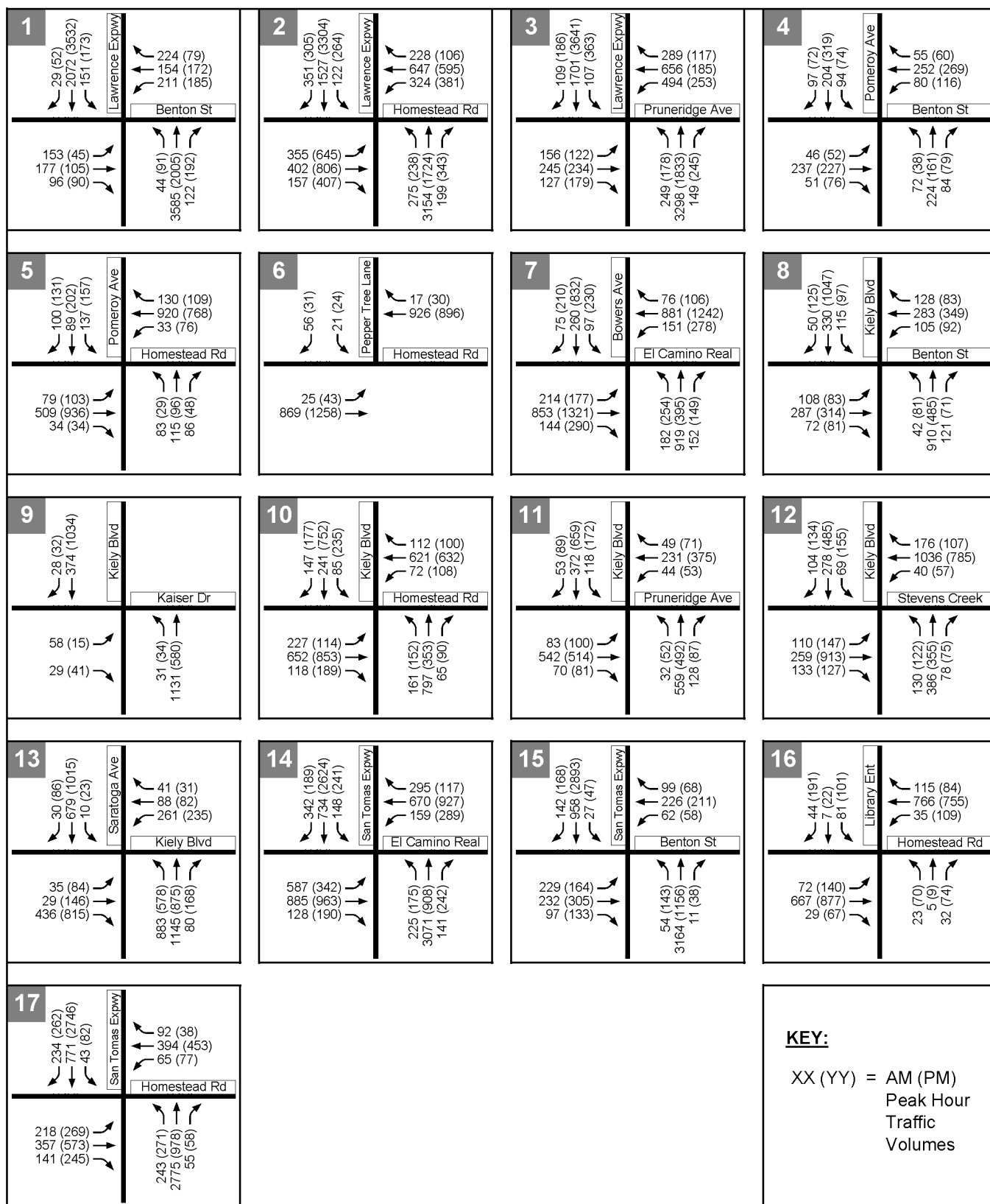
Use	Daily		AM Peak Hour				PM Peak Hour			
	Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total
Proposed										
Single Family (45 du)	9.57	431	0.75	9	25	34	1.01	29	16	45
Condo/Townhouse (225 du)	5.68	1,279	0.44	17	82	99	0.52	78	39	117
Apartments (536 du)	6.29	3,372	0.50	53	213	266	0.58	203	109	312
Total		5,082		79	320	399		310	164	474
Existing										
Medical Office Buildings (30 ksf) ²		780		47	9	56		30	48	78
Total Net New Trips (Proposed – Existing)		4,302		32	311	343		280	116	396

Source: Fehr and Peers 2008

Notes:

¹ Trip rates are expressed as trips per dwelling unit (du).

² Based on AM and PM peak period driveway counts conducted at the north parcel on Thursday, February 28, 2008. Daily trips were estimated using the factor that PM peak-hour trips are equal to 10 percent of the daily trips.



SOURCE: Fehr & Peers - August 2008

FIGURE 4.12-5

Background Peak-Hour Traffic Volumes

Trip Distribution

The directions of approach and departure for the project traffic were estimated based on the existing travel patterns in the area and the relative locations of employment centers, schools, and retail land uses. **Figure 4.12-6, Project Trip Distribution**, shows the major directions of approach and departure from the project site and the trip distribution pattern for the project. As shown, the majority of project traffic would approach and depart the site using Kaiser Drive, Kiely Boulevard, and Homestead Road.

Trip Assignment

The project trips were assigned to the roadway system based on the directions of approach and departure discussed above. **Figure 4.12-7, Project Trip Assignment**, shows the peak-hour project-trip assignment. The negative numbers represent the movements where more trips from the medical office were subtracted than trips added by the residential project. The new project trips from **Figure 4.12-7** were added to background traffic volumes to establish intersection volumes for Project Conditions shown on **Figure 4.12-8, Project Peak-Hour Traffic Volumes**.

Scenario 4: Cumulative No-Project Conditions

Cumulative no-project traffic volumes, as shown in **Figure 4.12-9, Cumulative No-Project Peak-Hour Volumes**, were estimated by increasing existing AM and PM peak-hour traffic volumes by applying an annual growth rate of 1.2 percent per year for a total of 2 years. The growth rate represents traffic from pending and future developments in Santa Clara, as well as through traffic from adjacent jurisdictions, and was established in consultation with City staff. The growth rate was applied until the expected completion date of the project (2010)¹ and resulted in a 2.4 percent overall increase in existing traffic volumes. Traffic from approved and pending (see **Table 4.0-1**) developments was added to the expanded existing volumes to obtain traffic volumes representing Cumulative No Project conditions

Scenario 5: Cumulative Plus Project Conditions

The net new project trips were added to the cumulative no-project volumes to represent volumes for cumulative plus project conditions as shown on **Figure 4.12-10, Cumulative Plus Project Peak-Hour Traffic Volumes**.

¹ The project is expected to be operational in 2011. However, this section conservatively assumes a completion date of 2010.

4.12.4.4 Project Impacts and Mitigation Measures

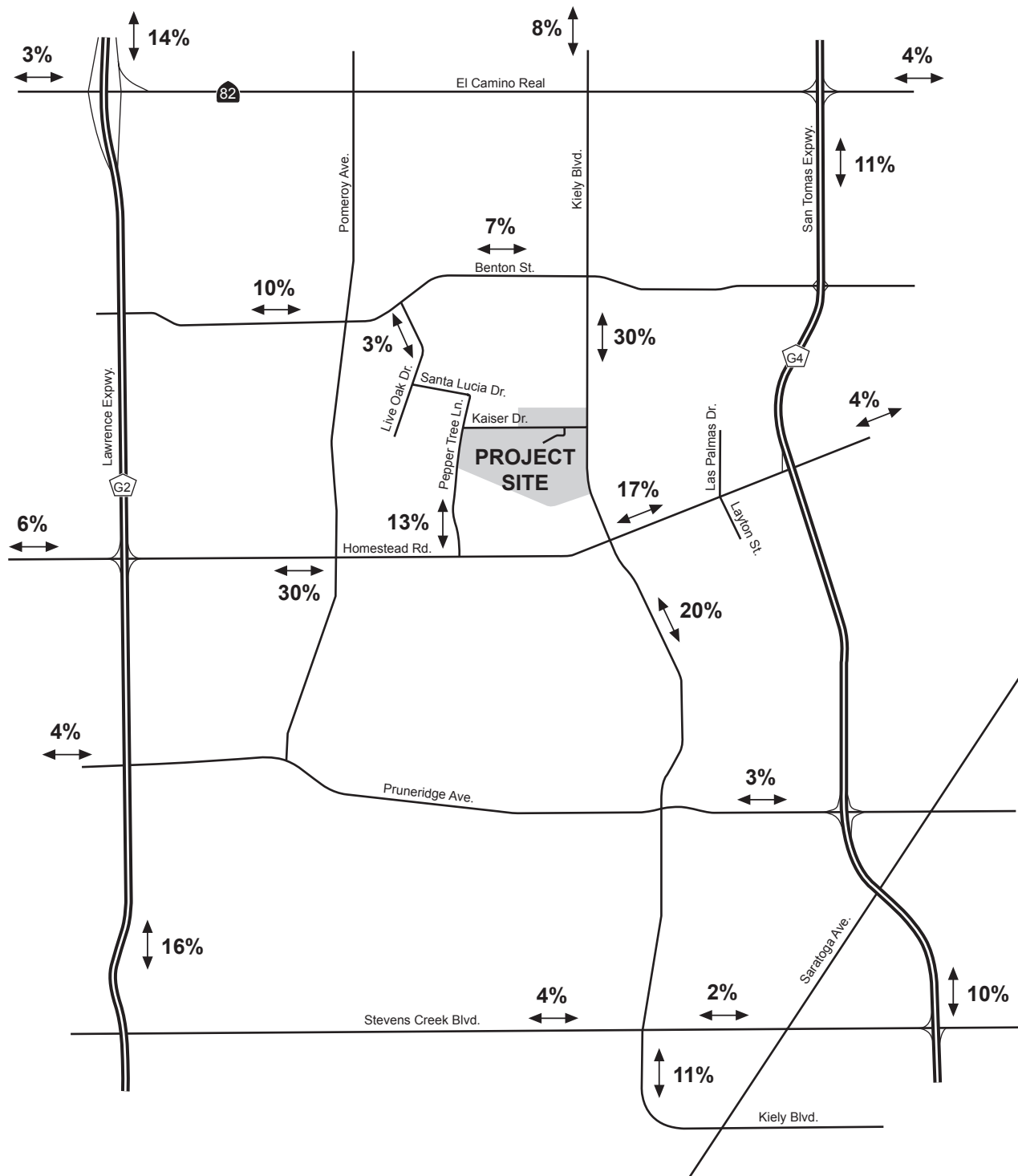
Potential project impacts on transportation and traffic are discussed in this subsection. The traffic impact analysis compared the results of the level of service calculations under project conditions to the result under background conditions. This was done to isolate the project's impact to surrounding intersections and roadways (project conditions) and to show the effect the project, in addition to approved but not yet developed projects would have on surrounding intersections and roadways.

Impact TRANS-1: Development of the project would result in an operational impact at the CMP intersection of San Tomas Expressway and El Camino Real. (*Significant; Less than Significant with Mitigation*)

As shown in **Table 4.12-5**, the proposed project would result in the addition of 343 net new AM peak hour and 396 net new PM peak hour vehicle trips to the study area road network. The effects of these additional vehicle trips on intersection levels of service were calculated for the Project Conditions and the resulting levels of service are presented in **Table 4.12-6, Background and Project Intersection Level of Service**. The results for background conditions are included for comparison purposes, along with the projected increases in critical delay and critical V/C ratios due to project trips. As stated earlier, critical delay represents the delay associated with the critical movements of the intersection, or the movements that require the most "green time" and have the greatest effect on overall intersection operations. The changes in critical delay and critical V/C ratio between background and project conditions are used to identify significant impacts. In some instances, slight improvements in critical delay occur under project conditions due to the method the program uses to allocate green time to the various turning movements.

The addition of project traffic would not degrade the operation of any of the study area City intersections from an acceptable level (D or better) to an unacceptable level. Four intersections (Lawrence Expressway and Homestead Road - LOS F, PM peak hour; San Tomas Expressway and El Camino Real - LOS F, AM and PM peak hours; San Tomas Expressway and Benton Street – LOS E AM peak hour; and San Tomas Expressway and Homestead Road - LOS E, PM peak hour)² would operate at unacceptable levels of service under Background Conditions. The addition of project traffic would not further degrade the LOS at any of the four intersections. However, as shown in **Table 4.12-6**, at the intersection of San Tomas

² The San Thomas Expressway and Homestead Road intersection would worsen to LOS E during the AM peak hour, which is acceptable levels of service according to their designated LOS standard.



LEGEND:

① = Study Intersections

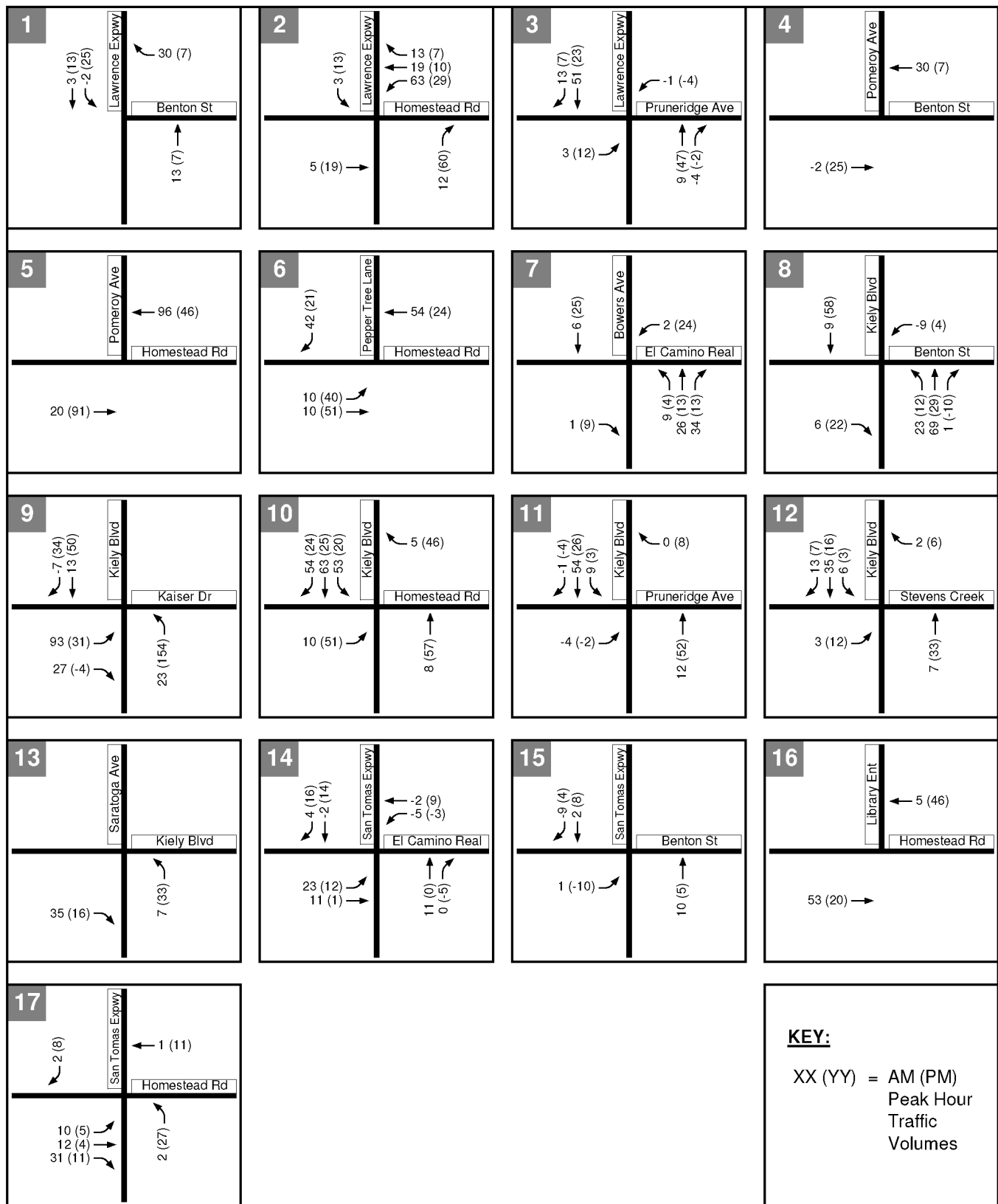


NOT TO SCALE

SOURCE: Fehr & Peers - August 2008

FIGURE 4.12-6

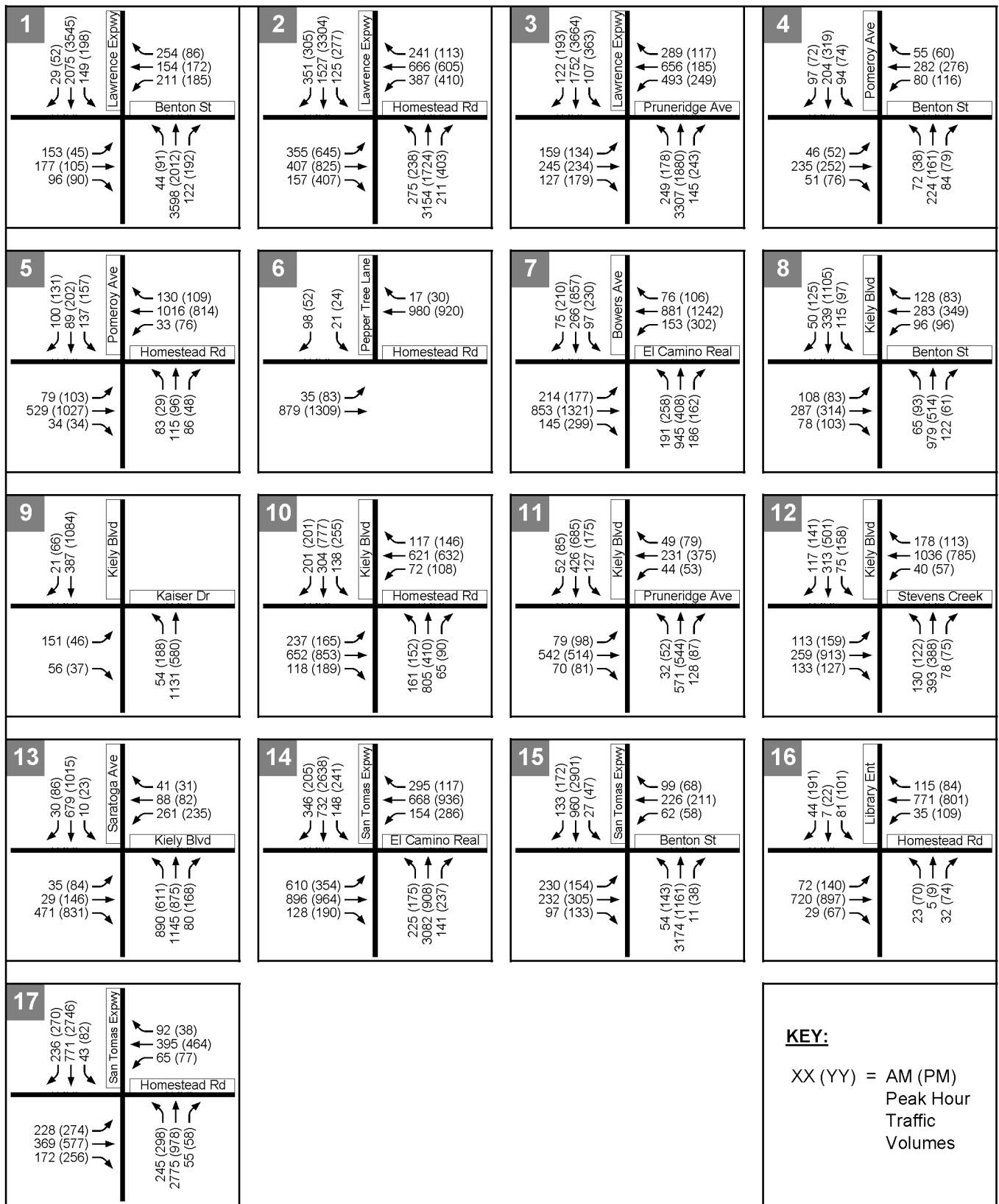
Project Trip Distribution



SOURCE: Fehr & Peers - August 2008

FIGURE 4.12-7

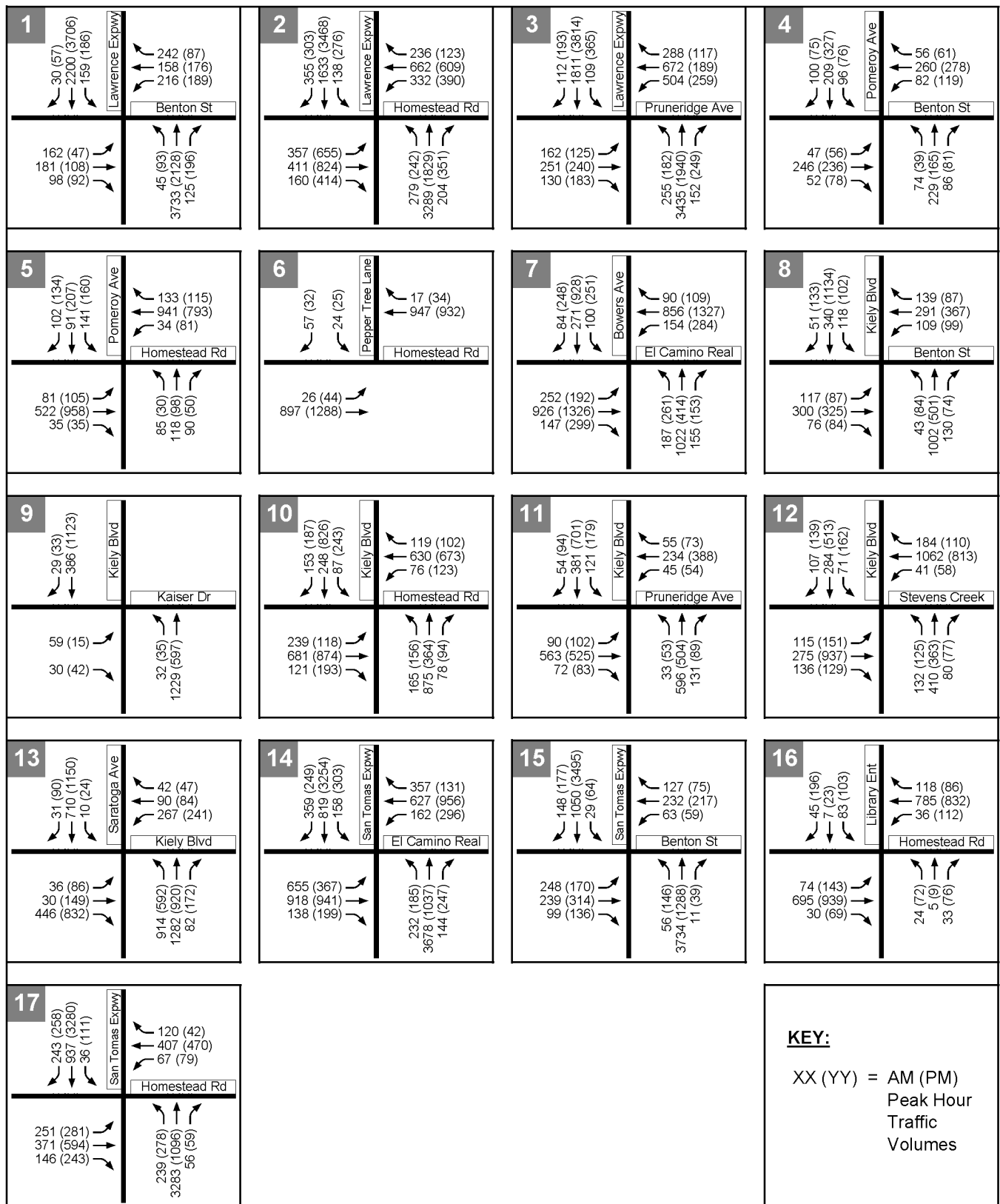
Project Trip Assignment



SOURCE: Fehr & Peers - August 2008

FIGURE 4.12-8

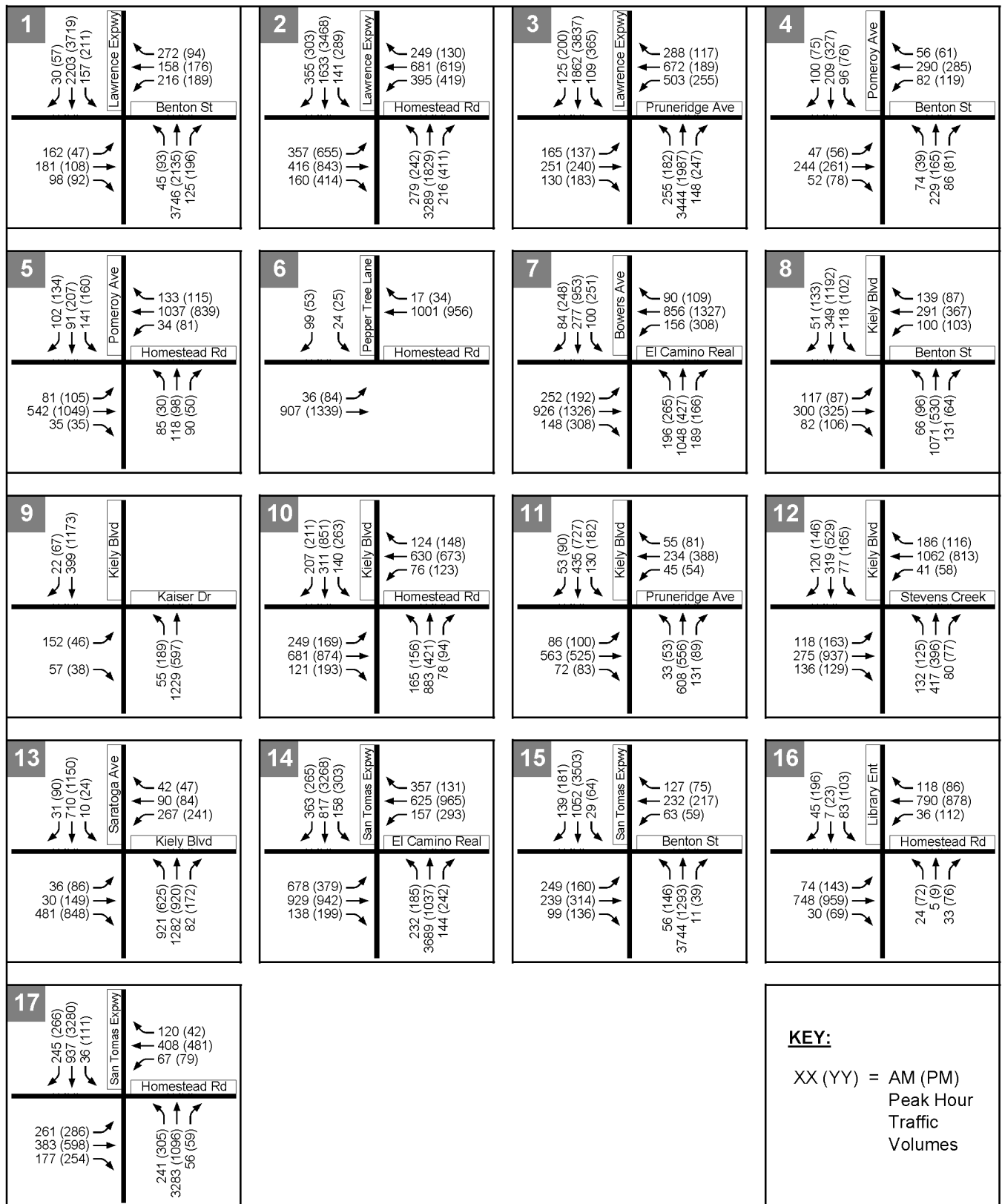
Project Peak-Hour Traffic Volumes



SOURCE: Fehr & Peers - August 2008

FIGURE 4.12-9

Cumulative No Project Peak-Hour Traffic Volumes



SOURCE: Fehr & Peers - August 2008

FIGURE 4.12-10

Cumulative Plus Project Peak-Hour Traffic Volumes

Expressway and El Camino Real the proposed project would increase the critical delay by 5.5 seconds and increase the V/C ratio by 0.016 during the AM peak hour and increase the critical delay by 4.0 seconds and increase the V/C ratio by 0.011 during the PM peak hour. The project would therefore exacerbate LOS F operations at this intersection during the AM peak hour by more than 4 seconds and would increase the V/C ratio by more than 0.01, as well as increase the V/C ratio by more than 0.01 in the PM peak hour. Thus, the proposed project would have a significant impact on the operation of San Tomas Expressway and El Camino Real intersection. The following mitigation measure is proposed to address this significant impact.

Table 4.12-6
Background and Project Intersection Levels of Service

Intersection	Background				Project					
	Peak Hour ¹	Avg Delay ²	LOS ³	Crit Delay	Crit V/C	Avg Delay ²	LOS ³	Crit Delay	Crit V/C	Δ in Crit. Delay
1. Lawrence Expwy/Benton St	AM PM	39.1 30.7	D C	44.1 28.9	0.885 0.776	39.4 31.5	D C	41.0 28.9	0.886 0.778	0.001 0.002
2. Lawrence Expwy/Homestead Rd ⁶	AM PM	52.2 131.3	D- F	59.1 135.4	0.884 1.008	55.1 137.1	E+ F	60.8 137.6	0.891 1.011	0.006 0.003
3. Lawrence Expwy/Pruneridge Ave	AM PM	47.9 35.1	D D+	47.7 33.7	0.839 0.811	47.8 35	D D+	47.8 33.6	0.841 0.814	0.003 0.002
4. Pomeroy Ave/Benton St	AM PM	11.2 11.4	B+ B+	11.2 11.4	0.372 0.427	11.2 11.5	B+ B+	11.2 11.4	0.381 0.429	0.010 0.002
5. Pomeroy Ave/ Homestead Rd	AM PM	19.9 20.6	B- C+	19.0 19.4	0.572 0.545	20.1 20.7	C+ C+	19.5 19.7	0.603 0.575	0.032 0.030
6. Pepper Tree Lane/ Homestead Rd	AM PM	10.0 7.4	B+ A	9.7 6.1	0.340 0.393	12.8 9.2	B A	12.8 7.5	0.388 0.421	0.048 0.028
7. Bowers Ave/ El Camino Real ⁶	AM PM	31.3 38.2	C D+	32.1 43.8	0.657 0.864	31.4 39.7	C D	32.2 46.5	0.665 0.890	0.008 0.026
8. Kiely Blvd/ Benton St	AM PM	31.8 29.3	C C	30.2 27.1	0.581 0.592	31.6 29.8	C C	29.9 27.6	0.602 0.617	0.021 0.025
9. Kiely Blvd/ Kaiser Dr	AM PM	11.4 11.4	B+ B+	11.2 11.1	0.407 0.412	12.0 13.5	B+ B	11.8 14.0	0.459 1.557	0.052 0.145
10. Kiely Blvd/ Homestead Rd	AM PM	31.8 33.1	C C-	33.4 34.0	0.627 0.672	33.3 34.2	C- C-	35.7 34.2	0.670 0.679	0.043 0.008
11. Kiely Blvd/ Pruneridge Ave	AM PM	29.9 29.8	C C	29.4 26.6	0.458 0.478	30.0 29.8	C C	29.8 26.6	0.467 0.485	0.009 0.007
12. Kiely Blvd/ Stevens Creek ⁶	AM PM	40.0 42.9	D D	43.2 43.0	0.446 0.496	41.1 43.3	D D	45.0 43.3	0.475 0.502	0.030 0.007

4.12 Transportation and Traffic

Intersection	Peak Hour ¹	Background				Project					
		Avg Delay ²	LOS ³	Crit Delay	Crit V/C	Avg Delay ²	LOS ³	Crit Delay	Crit V/C	Δ in Crit. Delay	
13. Kiely Blvd/ Saratoga Ave ⁶	AM	33.3	C-	45.0	0.537	33.2	C-	44.9	0.540	0.002	0.0
	PM	48.0	D	53.4	0.776	48.0	D	53.7	0.786	0.010	0.2
14. San Tomas Expwy/El Camino Real ⁶	AM	95.8	F	116.5	1.133	99.6	F	122.0	1.149	0.016	5.5
	PM	93.5	F	94.6	0.905	94.8	F	98.6	0.916	0.011	4.0
15. San Tomas Expwy/Benton St	AM			82.0	0.997			83.2	1.000	0.003	
	PM	67.2	E	52.2	0.957	68.1	E	50.8	0.953	-	1.2
16. Library Entrance/ Homestead Rd.	AM	47.5	D			46.7	D		0.004		-1.5
	PM	16.8	B	16.2	0.369	16.7	B	16.1	0.370	0.002	0.0
17. San Tomas Expwy/ Homestead Rd ⁶	AM	21.4	C+	21.2	0.537	21.3	C+	21.2	0.544	0.006	-0.1
	PM	60.5	E	70.3	0.952	61.8	E	72.6	0.9581	0.006	2.4
	PM	75.7	E-	94.7	1.058	79.4	E-	101.0	.074	0.015	6.4

Source: Fehr & Peers 2008

Notes: Significant impacts are identified in **bold** type.

¹ AM = morning pea hour, PM = evening peak hour.

² Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized intersections.

³ LOS calculations performed using the 2000 Highway Capacity Manual (HCM) methodology and based on average delay calculations.

⁴ Change in the critical volume-to-capacity ratio (V/C) between Background and Project Conditions.

⁵ Change in critical movement delay between Background and Project Conditions.

⁶ Designated CMP intersection

Source: Fehr & Peers 2008

Notes: Significant impacts are identified in **bold** type.

¹ AM = morning pea hour, PM = evening peak hour.

² Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized intersections.

³ LOS calculations performed using the 2000 Highway Capacity Manual (HCM) methodology and based on average delay calculations.

⁴ Change in the critical volume-to-capacity ratio (V/C) between Background and Project Conditions.

⁵ Change in critical movement delay between Background and Project Conditions.

⁶ Designated CMP intersection

Mitigation Measure TRANS-1: Traffic from the proposed project would exacerbate LOS F operations during the AM peak hour. The City and County have a planned improvement project that would add a second eastbound left-turn lane to El Camino Real to northbound San Tomas Expressway. This improvement is identified as a Tier 1 priority in the *Comprehensive County Expressway Planning Study Implementation Plan* (Santa Clara County Roads and Airport Department 2003). The project applicant shall pay a fair share contribution to the City towards the County's addition of a second left-turn lane on the eastbound approach to the San Tomas Expressway and El Camino Real intersection. Implementation of this mitigation measure will improve the operation of the intersection to LOS E.

Significance After Mitigation: As part of Mitigation Measure TRANS-1, the project applicant shall pay the project's fair share of the costs of the proposed improvements, which would reduce this impact to a less-than-significant level.

Impact TRANS-2: **Development of the project would not conflict with policies, programs or plans for alternate transportation nor would it create a hazardous condition for pedestrians or bicyclists, (*Less than Significant*)**

The project would have a significant impact to alternate transportation programs for pedestrian, bicycle, and transit facilities and services if an element of the proposed project would conflict with existing or planned pedestrian, bicycle, and transit services or if the proposed project would create a hazardous condition for pedestrians or bicyclists that currently do not exist.

Pedestrian and Bicycle Facilities

Implementation of the project would generate a population of 2,080 additional persons in the City. This increase in population would increase pedestrian traffic and individuals using bicycles in the area. Sidewalks are present along both sides of Kaiser Drive and Kiely Boulevard near the project site, and bicycle lanes are provided on Pomeroy Avenue west of the project site. No pedestrian and bicycle facilities are planned in the area.

Pedestrian circulation would be accommodated throughout the site (see **Figure 3.0-7, Conceptual Pedestrian Circulation Diagram**). A 5-foot-wide pedestrian path would be constructed within the 100-foot creek setback area and would extend in a northwest direction along the southern boundary of the project site, where existing mature trees would be preserved. The pedestrian path would also extend to the north providing access to the internal roadways and other portions of the site, including the multifamily units, town houses, and Kaiser Drive. A 10-foot-wide multipurpose (bicycle/pedestrian) trail would traverse the southeast property line adjacent to Saratoga Creek. This trail would connect to a 13-foot-wide bicycle/pedestrian lane that would traverse the eastern site boundary (see **Figure 3.0-8,**

Conceptual Landscaping Plan). The trail would include a 5-foot sidewalk and an 8-foot-wide multi-use trail for pedestrian and bicycle use. This trail would lead to the Kiely Boulevard and Kaiser Drive intersection, to allow pedestrians and cyclists safe access to Central Park using the crosswalk at that intersection. Given the above, the proposed project would have a less-than-significant impact with existing or planned bicycle facilities.

Transit Service

One bus route (Route 81) operates adjacent to the project site with stops located on Kiely Boulevard near Kaiser Drive. The proposed project would not alter the existing bus stop on Kiely Boulevard. The existing transit service is expected to accommodate the increased demand from the proposed project, thus, the project's impacts to the transit facilities are less than significant.

The project would not conflict with adopted policies, plans, or programs that would conflict with alternative transportation. The project would provide pedestrian and bicycle paths, and would not preclude any planned pedestrian and bicycle facilities in the future.

Mitigation Measure: No mitigation measures are required.

Impact TRANS-3: **Development of the project would not result in a hazard due to a design feature or inadequate emergency access. (*Less than Significant*)**

Figure 3.0-5, Proposed Vehicular Circulation and Parking Plan, shows the conceptual vehicular circulation and parking plan for the project site. Access to the site would be provided from Kaiser Drive and Kiely Boulevard. Kaiser Drive would be converted from a private roadway to a public roadway. No driveways would be provided on Pepper Tree Lane or Miles Drive. Parcels 1 and 2 are proposed to have one primary access road entry and parking lot entrance from Kaiser Drive and one secondary access road entry from Kiely Boulevard. The secondary entry from Kiely Boulevard would be right-in/right-out only. Parcel 3 is proposed to have two driveway entries from Kaiser Drive. Four driveways would provide adequate capacity for vehicles to enter and exit the site.

Emergency access to the site would be provided via the Kaiser Drive and Kiely Boulevard driveways. In addition, a secondary emergency vehicle access would be provided from Kiely Boulevard along the southern boundary of the south parcel. The design of this vehicular access pathway would be developed in consultation with City Fire Department staff (see **Section 4.10, Public Services**, of this EIR for a discussion on fire response times and staffing). Based on the proposed plan, emergency vehicle access is considered adequate.

Primary and secondary streets would be constructed to provide internal circulation, with the main vehicular circulation in a north-south and east-west direction. The internal roadways have been designed to provide a 36-foot inside, 56-foot outside fire truck turning radius. The two proposed project driveways that would provide access to Parcel 3 would connect to a new east-west street that would span the width of the site. The units within this parcel would be accessed by private alleys oriented in a north-south direction that connect to the new east-west street. Guest parking would be provided at the ends of the private alleys.

For Parcels 1 and 2, the driveway that would extend from Kaiser Drive would be a north-south street with two internal streets connecting perpendicular to it and one street intersecting at an angle. The town houses that would be located in the western portion of the site would be accessed via north-south alleys. Guest parking would be provided in parallel spaces on the new streets. The single-family homes that would be located on the southern portion of the site would also be accessed via north-south alleys. An additional driveway would extend from Kaiser Drive and would lead directly to the parking structure closest to Kaiser Drive. A small guest parking lot would also be served by this driveway. The project driveways on Kaiser Drive for Parcel 3 and Parcels 1 and 2 would line up across from each other creating two four-legged intersections. Each parking structure would have two garage entrances, and the entrances to the parking structures on the internal street would also line up with each other to create a four-legged intersection. Given the above, the proposed on-site circulation is adequate to serve the 806 housing units proposed by the applicant. The project would have a less-than-significant impact on local circulation.

Mitigation Measure: No mitigation measures are required.

Impact TRANS-4: **The proposed project would provide adequate parking capacity. (*Less than Significant*)**

Table 3.0-2, Proposed Parking, and **Figure 3.0-5** shows the number of parking spaces and configuration of parking proposed at the project site. As shown in the table, a total of 1,747 parking spaces would be provided, including two parking spaces for each housing unit on the site and 135 guest parking spaces. Two multi-level parking garages that would be located within each apartment building would provide a total of 1,072 parking spaces (548 spaces for the north multi-family building and 524 spaces for the south multi-family building) and 54 guest parking spaces for the multifamily units.

The Santa Clara Municipal Code requires parking for residential uses at a rate of two covered spaces per single-family dwelling unit and one covered and one uncovered parking space per multi-family dwelling unit. The Planned Development-Master Community district allows for tandem parking. Approximately 25 percent of the parking on site is tandem parking; apartments do not utilize tandem parking as shown in **Figure 3.0-5**. The City's parking requirements were used to determine whether a project would have an

impact to parking capacity since the adopted municipal code is designed to provide standards specific to land uses for development or redevelopment in the City. The project as designed will meet the City's parking requirement. Therefore, the project would have a less-than-significant impact to parking capacity.

Note that when the Kaiser facility occupied the site, overflow vehicles associated with special events at Central Park, such as Fourth of July and the Art and Wine Festival, parked in the hospital parking lot. When Kaiser vacated the property in October 2007, the overflow parking was no longer allowed on the site because the site is secured and fenced off. Consequently, the overflow of parking at the project site is not part of the baseline conditions.

Mitigation Measure: No mitigation measures are required.

Impact TRANS-5: **Development of the project would increase the average daily traffic volume above 150 vehicles per day on Pepper Tree Lane. (*Significant; Less than Significant with Mitigation*)**

The main access routes to the project site are Kiely Boulevard and Kaiser Drive. Most of the project traffic is expected to use these streets to access the project site. However, the project would add traffic to Pepper Tree Lane, Santa Lucia Drive, and Live Oak Drive, which are neighborhood streets located to the west of the project. Existing 24-hour traffic volumes representing an average weekday are summarized in **Table 4.12-7, Existing Daily Volumes**. As shown in the table, these streets currently carry between 1,285 and 1,753 vehicles per day.

**Table 4.12-7
Existing Daily Volumes**

Streets	Location	Existing Traffic	Daily Traffic added by project	Total Daily Traffic
		Volume (vehicles per day)		
Pepper Tree Lane	Marietta Drive to Pepper Tree Court	1,595	600	2,195
	Kaiser Drive to Santa Lucia Drive	1,753	130	1,813
Live Oak Drive	Catalina Avenue to Loma Alta Drive	1,285	130	1,345

Source: Fehr & Peers, 2008.

The project trips likely to use Pepper Tree Lane and Live Oak Drive would be generated by drivers traveling to the west to and from Lawrence Expressway. Using the project trip distribution and the daily trip generation for the project, it is estimated that approximately 600 daily vehicle trips could be added to Pepper Tree Lane south of Kaiser Drive. This is equivalent to approximately one additional vehicle per minute during the peak hours. In addition, the project could add 130 daily vehicle trips to Santa Lucia Drive and Live Oak Drive. Based on the City's neighborhood traffic impact criteria, the traffic added to Santa Lucia Drive and Live Oak Drive would not result in a significant neighborhood impact because less than 150 trips would be added to these streets. However, the 600 daily trips added to Pepper Tree Lane would result in a significant neighborhood traffic impact.

An alternative to address these trips could be the closure of Kaiser Drive near Pepper Tree Lane that would completely eliminate this neighborhood traffic impact. However, this road closure would require drivers who currently use the Kaiser Drive and Kiely Boulevard intersection to use Pepper Tree Lane and Live Oak Drive to access Homestead Road and Benton Street. Based on the existing volumes at the Kaiser Drive and Kiely Boulevard intersection, this could amount to a shift of 400 to 500 vehicles per day. Therefore, a road closure is not recommended. The **Mitigation Measure TRANS-5** below is recommended to reduce this impact to less than significant.

It is important to note that when the Kaiser facility occupied the project site, the hospital uses added similar volumes of traffic to the neighborhood streets. Based on the daily traffic generated by the hospital, the estimated volume that Kaiser added was approximately 600 daily trips to Pepper Tree Lane south of Kaiser Drive and 780 daily trips to Live Oak Drive.

Mitigation Measure TRANS-5: The applicant shall design and construct the following improvements as part of the proposed development. A "No Left Turn" and "No Right Turn" sign shall be added to the

Kaiser Drive driveway exits with raised medians and curb extensions and striping placed on Kaiser Drive to define the travel lanes and to minimize drivers using Pepper Tree Lane to access the project site as shown in **Figure 4.12-11, Recommended Driveway Enhancements**.

Significance After Mitigation: Implementation of **Mitigation Measure TRANS-5** would reduce the daily trips added to Pepper Tree Lane by the project to less than 150 vehicles per day. This would reduce the significant traffic neighborhood impact to less than significant.

The recommended driveway enhancements would change the trip assignment at the Kiely Boulevard intersections at Benton Street, Kaiser Drive, and Homestead Road and the Pepper Tree Lane and Homestead Road intersection. Levels of service were calculated to determine whether there would be secondary impacts to these intersections. The LOS calculations sheets are included in the appendix of the traffic report (see **Appendix 4.12**). All of these intersections would continue to operate at LOS C or better during peak hours. Therefore, the recommended driveway enhancements would not cause a significant secondary traffic impact.

4.12.4.5 Cumulative Impacts and Mitigation Measures

The cumulative impacts of the project were evaluated by comparing the results of the level of service calculations under cumulative no-project conditions to the results under cumulative plus project conditions.

Impact TRANS-6: **The proposed project would make a cumulatively considerable contribution to cumulative level of service impacts at two study intersections. (*Significant; Less than Significant with Mitigation*)**

Intersection levels of service under cumulative no-project and cumulative plus project conditions were calculated and are shown in **Table 4.12-8, Cumulative Intersection Levels of Service**.

Table 4.12-8
Cumulative Intersection Levels of Service

Intersection	Peak Hour ¹	Cumulative No-project				Cumulative plus Project					
		Avg Delay ²	LOS ³	Crit Delay	Crit V/C	Avg Delay ²	LOS ³	Crit Delay	Crit V/C	Δ in Crit V/C ⁴	Δ in Crit Delay ⁵
1. Lawrence Expwy/Benton St	AM	41.3	D	44.4	0.919	41.9	D	44.4	0.920	0.001	-0.1
	PM	31.7	C-	30.1	0.809	32.5	C-	30.2	0.811	0.002	0.0
2. Lawrence Expwy/Homestead Rd ⁴	AM	54.8	D-	61.9	0.917	56.8	E+	63.7	0.924	0.006	1.8
	PM	134.7	F	138.6	1.044	140.4	F	140.7	1.047	0.003	2.1
3. Lawrence Expwy/Pruneridge Ave	AM	49.8	D	50.9	0.869	49.8	D	51.1	0.872	0.003	0.2
	PM	36.0	D+	35.4	0.845	35.9	D+-	35.3	0.847	0.002	-0.1
4. Pomeroy Ave/Benton St	AM	11.2	B+	11.2	0.382	11.2	B+	11.3	0.391	0.010	0.0
	PM	11.5	B+	11.5	0.438	11.6	B+	11.6	0.441	0.002	0.1
5. Pomeroy Ave/ Homestead Rd	AM	20.1	C+	19.3	0.586	20.4	C+	19.9	0.617	0.032	0.6
	PM	20.8	C+	19.6	0.560	21.0	C+	20.1	0.590	0.030	0.4
6. Pepper Tree Lane/ Homestead Rd	AM	10.2	B+	9.9	0.349	12.9	B	13.0	0.397	0.048	3.1
	PM	7.4	A	6.1	0.403	9.1	A	7.5	0.430	0.028	1.4
7. Bowers Ave/ El Camino Real ⁴	AM	32.4	C-	33.7	0.710	32.5	C-	33.8	0.718	0.008	0.1
	PM	41.0	D	47.7	0.903	43.0	D-	51.5	0.928	0.026	3.8
8. Kiely Blvd/ Benton St	AM	32.2	C-	30.7	0.624	32.0	C-	30.5	0.645	0.021	-0.2
	PM	29.8	C	27.7	0.632	30.5	C	28.6	0.660	0.029	0.9
9. Kiely Blvd/ Kaiser Dr	AM	12.0	B+	12.0	0.440	12.5	B	12.5	0.492	0.052	0.4
	PM	11.9	B+	11.8	0.443	14.0	B	14.7	0.588	0.145	2.9
10. Kiely Blvd/ Homestead Rd	AM	32.3	C-	34.1	0.662	33.9	C-	36.6	0.705	0.043	2.5
	PM	34.0	C-	35.5	0.713	35.1	D+	35.7	0.721	0.008	0.2

4.12 Transportation and Traffic

Intersection	Peak Hour ¹	Cumulative No-project				Cumulative plus Project					
		Avg Delay ²	LOS ³	Crit Delay	Crit V/C	Avg Delay ²	LOS ³	Crit Delay	Crit V/C	Δ in Crit V/C ⁴	Δ in Crit Delay ⁵
11. Kiely Blvd/ Pruneridge Ave	AM	30.0	C	29.5	0.478	30.0	C	29.9	0.488	0.009	0.4
	PM	29.9	C	26.7	0.498	29.9	C	26.8	0.505	0.007	0.0
12. Kiely Blvd/ Stevens Creek ⁴	AM	40.7	D	44.6	0.472	41.3	D	45.3	0.488	0.016	0.7
	PM	43.2	D	43.2	0.513	43.7	D	43.5	0.520	0.007	0.3
13. Kiely Blvd/ Saratoga Ave ⁴	AM	33.2	C-	45.4	0.556	33.1	C-	45.4	0.559	0.002	0.0
	PM	49.2	D	55.8	0.814	49.5	D	56.2	0.824	0.010	0.4
14. San Tomas Expwy/El Camino Real ⁴	AM	121.4	F	165.4	1.318	125.3	F	171.6	1.334	0.016	6.2
	PM	96.7	E	102.3	1.031	98.1	F	106.2	1.042	0.011	3.9
15. San Tomas Expwy/Benton St	AM	112.7	F	148.3	1.151	113.9	F	149.8	1.154	0.003	1.4
	PM	77.6	E-	98.6	1.112	76.4	E-	96.3	1.108	-0.004	-2.3
16. Library Entrance/ Homestead Rd	AM	16.8	B	16.2	0.378	16.7	B	16.2	0.379	0.002	0.0
	PM	21.4	C+	21.3	0.563	21.3	C+	21.3	0.569	0.006	0.0
17. San Tomas Expwy Homestead Rd	AM	96.0	F	127.7	1.096	97.8	F-	131.0	1.102	0.006	3.3
	PM	111.7	F	149.4	1.204	115.6	F	156.0	1.219	0.015	6.6

Source: Fehr and Peers 2008

Notes: Significant impacts are identified in **bold** type.

¹ AM = morning peak-hour, PM = evening peak-hour.

² Whole intersection weighted average control delay is expressed in seconds per vehicle for signalized intersections using methodology described in the 2000 Highway Capacity Manual. LOS calculations were conducted using the TRAFFIX level of service analysis software package.

³ LOS = Level of service

⁴ Change in the critical volume-to-capacity ratio (V/C) between Cumulative No-project and Cumulative plus Project Conditions.

⁵ Change in critical movement delay between Cumulative No-project and Cumulative plus Project Conditions.

⁶ Designated CMP intersection

As shown in **Table 4.12-8**, the following four intersections would operate at unacceptable level of service based on their LOS standard under the cumulative no-project condition:

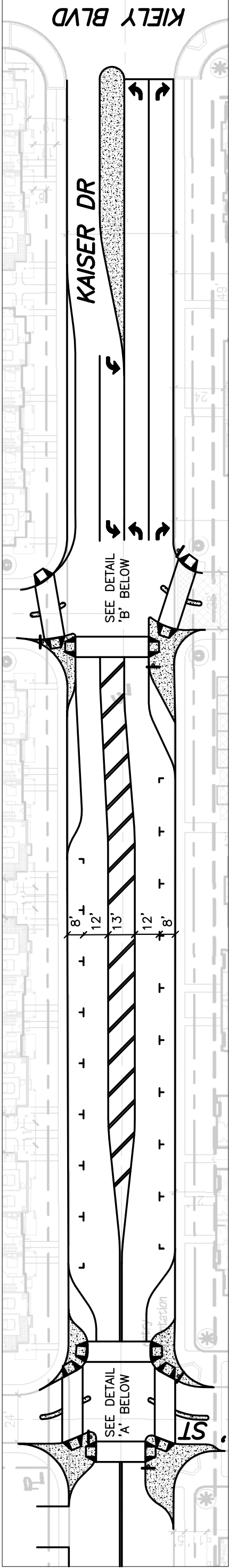
- Lawrence Expressway and Homestead Road
- San Tomas Expressway and El Camino Real
- San Tomas Expressway and Benton Street
- San Tomas Expressway and Homestead Road

The proposed project would make a cumulatively considerable contribution to the significant cumulative traffic impacts at three of four intersections. All other intersections would operate at acceptable levels of service under cumulative conditions.

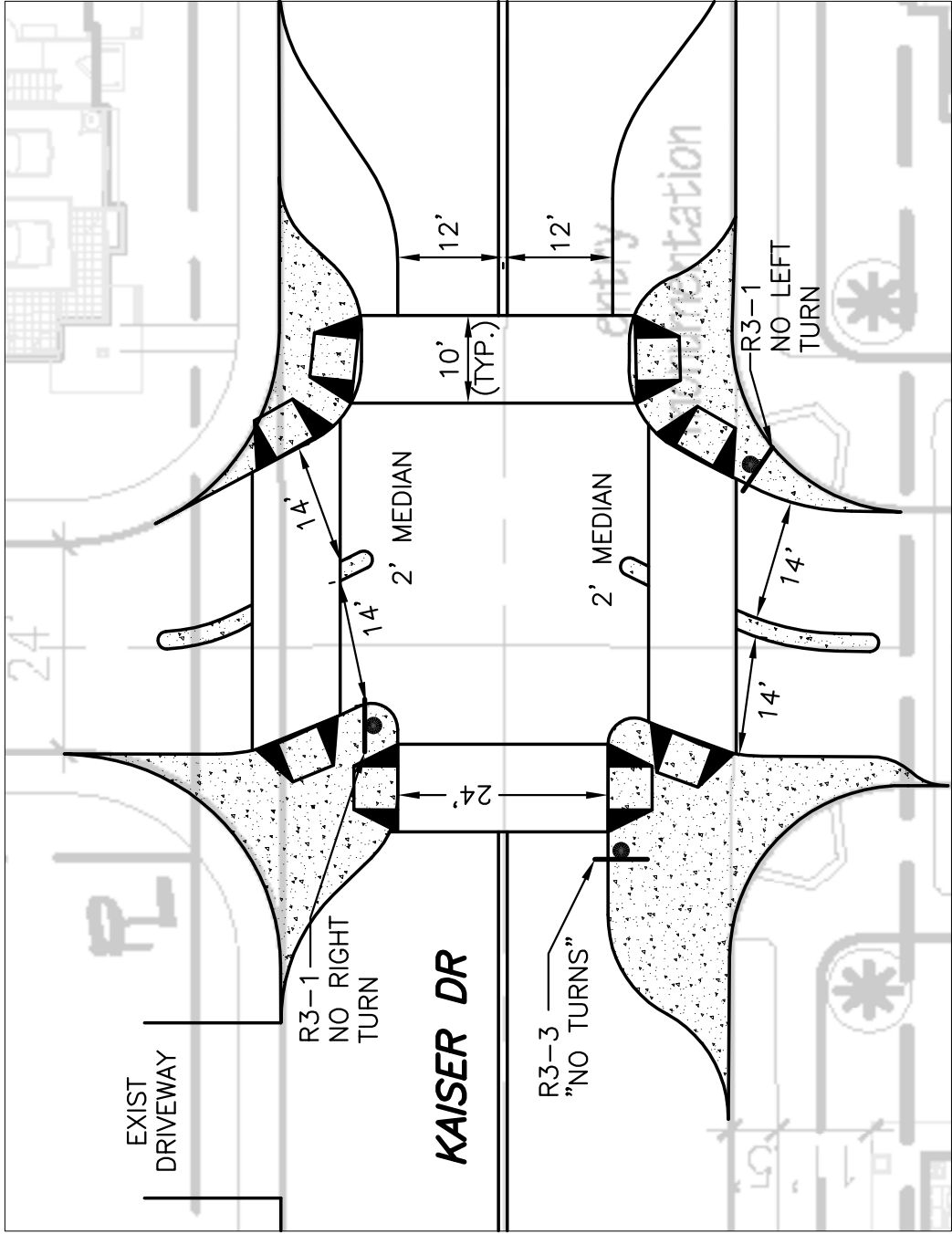
The intersection of San Tomas Expressway and El Camino Real would operate at LOS F during the AM peak hour and E- during the PM peak hour under cumulative no-project conditions. Project traffic would increase the critical delay movement by 6.2 seconds during the AM peak hour and by 3.9 seconds during the PM peak hour, and increase the V/C by 0.016 during the AM peak hour and 0.011 during the PM peak hour. The project would exacerbate LOS operations at this intersection during the AM and PM peak hour by more than 4 seconds and would increase the V/C ratio by 0.01, and thus would make a cumulatively considerable contribution to a significant cumulative traffic impact at this intersection.

The intersection of San Tomas Expressway and Homestead Road would operate at LOS F during PM peak hour under the cumulative no-project conditions. Project traffic would increase critical delay movement by 6.6 seconds and increase V/C by 0.015 to this intersection. The project would exacerbate LOS operations at this intersection during PM peak hour by more than 4 seconds and would increase the V/C ratio by more than 0.01. Thus, the project would make a cumulatively considerable contribution to a significant cumulative traffic impact at this intersection.

Mitigation Measures TRANS-6a: Implementation of **Mitigation Measure TRANS-1** at the intersection of San Tomas Expressway and El Camino Real will improve the operation of the intersection to LOS E in the AM Peak Hour but the intersection would continue to operate at LOS F in the PM Peak Hour. As a condition of approval, the City of Santa Clara will collect an impact fee to be determined by the City. This is consistent with City policy to collect fees from projects that have a significant impact on County expressways to fund regional facilities within the City. This would mitigate the project's cumulative impact to less than significant.

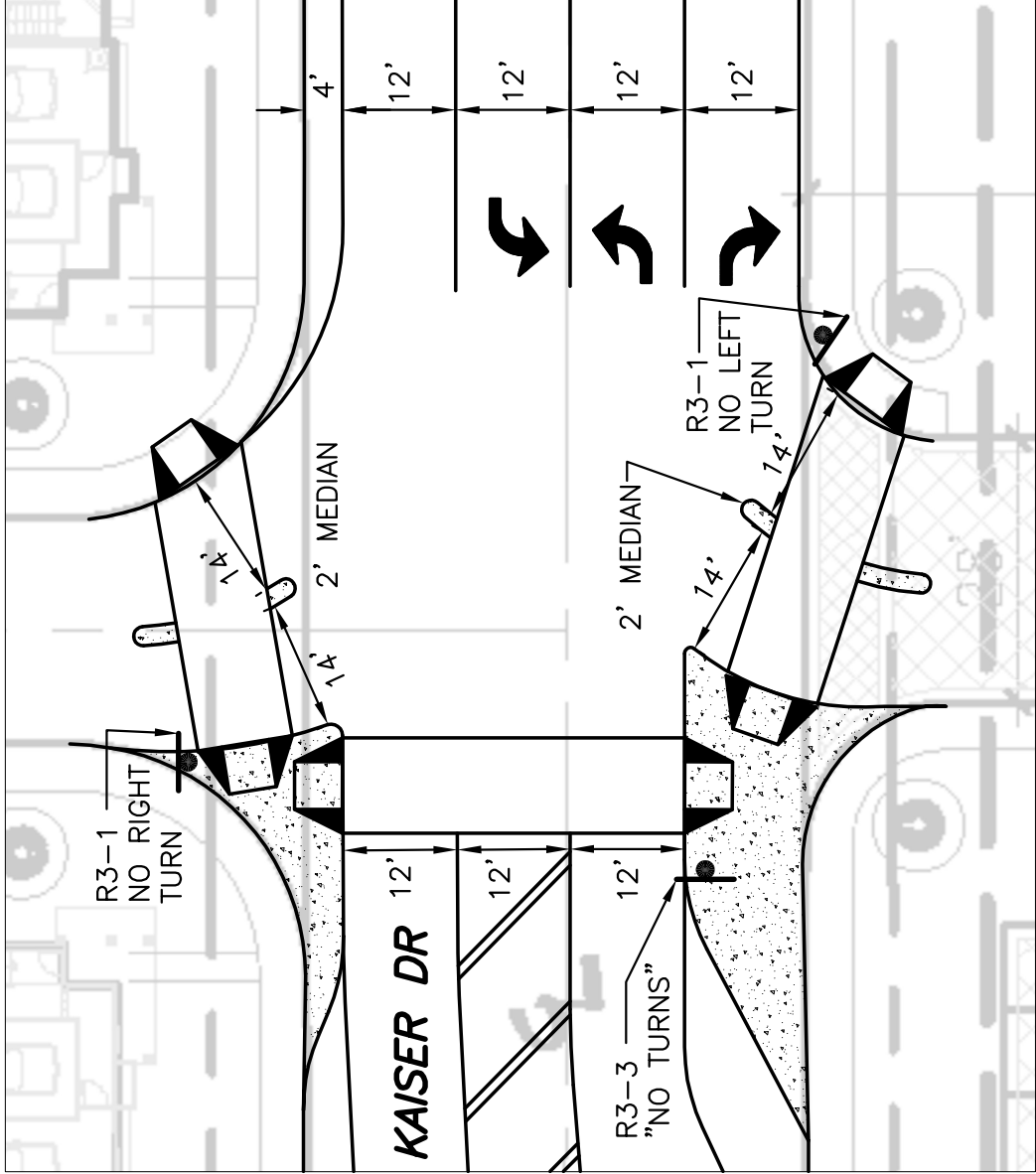


KAISER DRIVE BETWEEN 'A' STREET AND KIELY BLVD (1"=50')



DETAIL 'A'

KAISER DRIVE AND 'A' STREET (1"=20')



DETAIL 'B'

KAISER DRIVE AND DRIVEWAY (1"=20')

Mitigation Measure TRANS-6b: The City and County have a planned improvement project that would add a second eastbound left-turn lane on Homestead Road at San Tomas Expressway. This improvement will require right-of-way acquisition from the property on the northwest corner of the intersection. The project will be required to pay its fair share of widening and right-of-way acquisition costs. The project's traffic represents 5.3 percent of the cumulative growth in traffic volumes at this intersection. The implementation of this mitigation will improve the operation of the intersection, but the intersection would still operate at LOS F. As a condition of approval, the City of Santa Clara will collect an impact fee to be determined by the City. This is consistent with City policy to collect fees from projects that have a significant impact on County expressways to fund regional facilities within the City and would mitigate the project's cumulative impact to less than significant.

Significance After Mitigation: Implementation of **Mitigation Measure TRANS-1** would add a second eastbound left-turn lane on El Camino Real, which would mitigate the project's cumulative contribution to a less-than-significant level. However, the intersection would continue to operate at LOS F during the AM peak hour. Construction of the planned improvement, as discussed in **Mitigation Measure TRANS-6b** above, would mitigate the project's contribution to the cumulative impact. However, the intersection would continue to operate at LOS F. The project applicant shall be required to pay its fair share of the widening and right-of-way acquisition costs. The project's traffic represents 5.3 percent of the cumulative growth in traffic volumes at this intersection. This improvement would mitigate the cumulative impact at this location. As part of **Mitigation Measures TRANS-6a and TRANS-6b**, payment of the project's fair share cost of improvements and collection of impact fees would reduce the impact at the intersection of El Camino and San Tomas and San Tomas and Homestead Road to a less-than-significant level. .

4.12.5 REFERENCES

Transportation Research Board. 2000. *Highway Capacity Manual – Special Report 209*.

